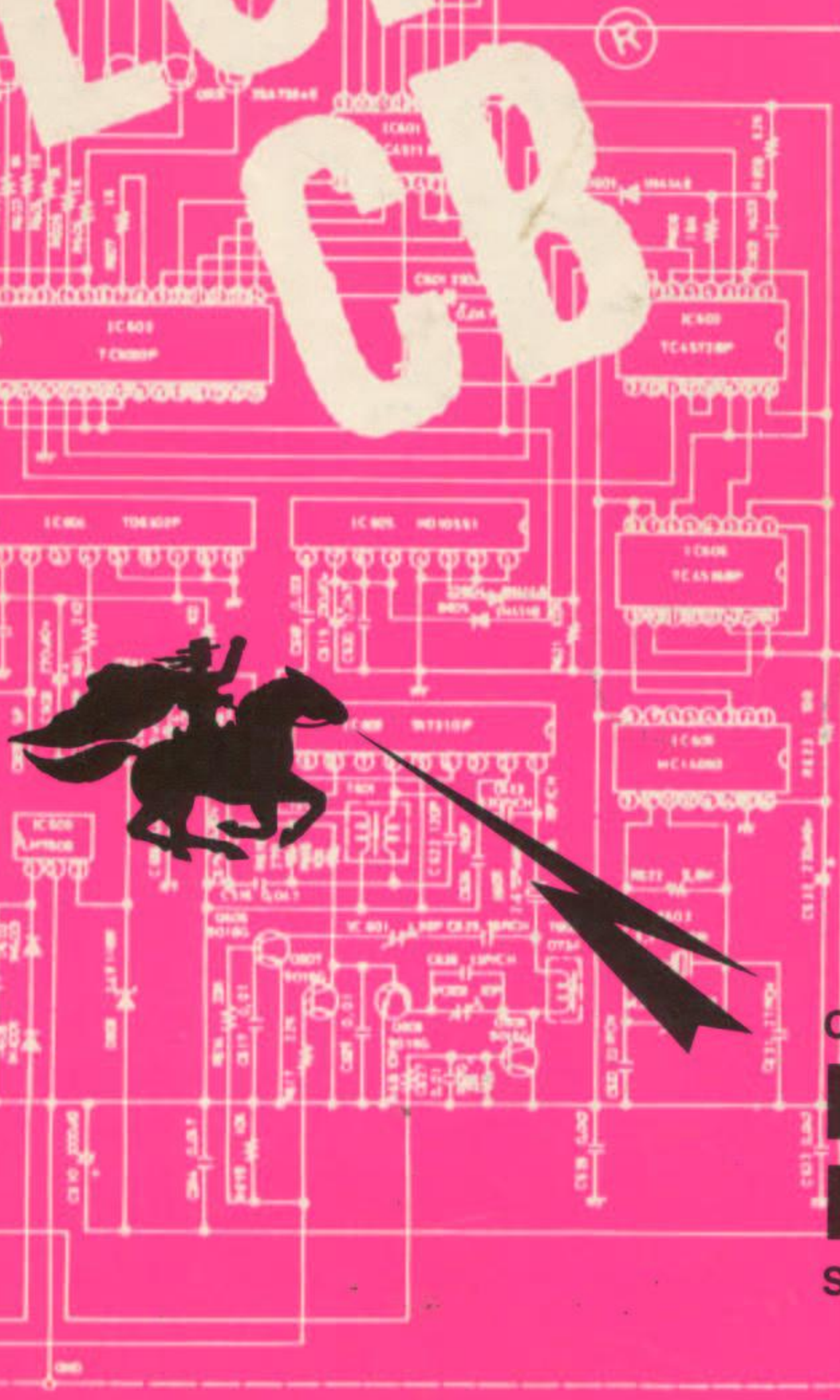
VOLUME 27

PUBLISHED AUGUST 1987

SECRET SCB®



CONFIDENTIAL

FACTUAL REPORT

SCHEMATICS ETC.

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IMPORTANT: READ THIS FIRST

The information in this book is not to be used to exceed F.C.C. specifications, in any case, as applied to power, modulation, frequency spectrum, etc. It is illegal to do this to any CLASS D RADIO.

This book is a factual report of gathered information, and as such is intended for use on radios for EXPORT ONLY.

If you are not familiar with electronics, it is better to check for advice with your local electronics or CB center, as to restrictions, etc., concerning your radio.

More information, on other units will be forthcoming in future issues.

This book will not be found at a book store, but can be obtained through your local CB Dealer or Distributor, or direct from Selman Enterprises.

Secret CB®
Volume Twenty-Seven
Published August 1987

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SECRET CB WISHES TO GRATEFULLY ACKNOWLEDGE THE FOLLOWING PEOPLE FOR THEIR HELP AND CONTRIBUTIONS TOWARD GETTING VOLUME 27 IN PRINT. THEIR ENCOURAGEMENT AND CONTRIBUTION OF MATERIAL HAS BEEN INVALUABLE.

CARL CLARK
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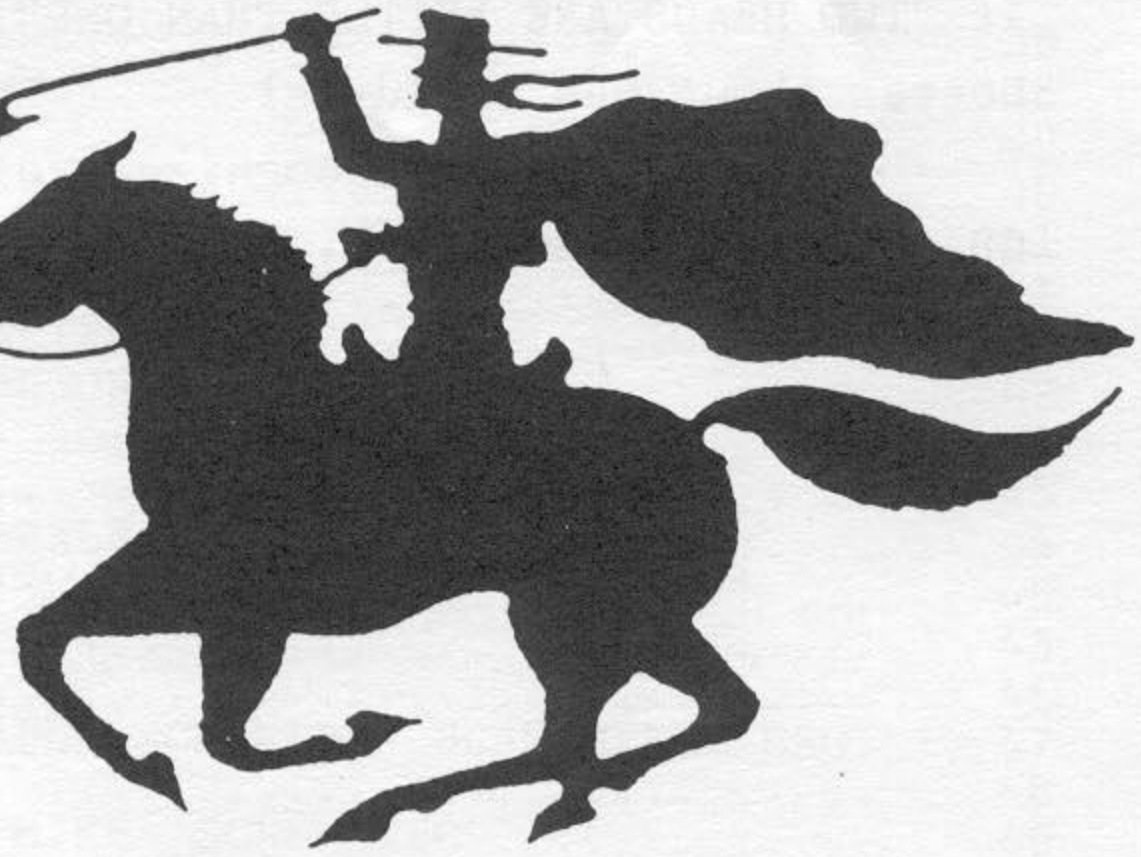
WANTED

NEW MODIFICATIONS
NEW CONVERSIONS
TECHNICAL TIPS
PROJECT PLANS
ETC. ETC. ETC.



DORIS SAYS "THANKS" AND A FREE BOOK TO THE ABOVE PEOPLE.

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INTRODUCTION

By Doris Selman

Ten years and twenty-seven volumes of SECRET CB has far exceeded my expectations. I am proud of this accomplishment and proud to be associated with all who have helped us to succeed in this endeavor.

As most of you know by now the Federal Communications Commission has amended Part 97 of the FCC regulations to allow NOVICE to go voice from 28.300MHz to 28.500MHz. Therefore, Card-Kit Electronics has come out with their Techs Choice "C" kit and Techs Choice "D" kit covering the NOVICE HAM BAND. We have come out with two SECRET CB NOVICE kits for the Jackson radio. Jackson NOVICE "A" kit and Jackson NOVICE "B" kit. New Product Information on these and other kits in this volume.

It has been confirmed by Dynascan that they will bring back the COBRA 29LTD. New Name - COBRA 29LTD CLASSIC. Packaging will show picture of a truck in recognition to the truck drivers that initiated this decision. No firm date for release at the time of this printing.

We still need ideas and input from you technicians. If "TWO HEADS ARE BETTER THAN ONE", just think of how much better thousands would be!

I would like to recognize again the editor of SECRET CB, William G Wentz Jr.. THANKS BILL!

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ED. NOTES

Question: How to split transmit and receive frequencies like on the Ranger AR-3300?

Answer: Cheapest way is to buy the Ranger! If you want the flexibility of frequency/mode/power and programming. (BW, I personally have split up to 1.5MHz on the Ranger and encountered no problems....)
OR, dust off the old units that needed separate crystals for transmit and receive. Figure out your frequencies, and you got it.
Problems with this is the fixed Fo's; and as sure as the sun will rise some A..-hole will find out the frequencies; then will move in on top of you!
Again, buy the Ranger - put all the troubles behind you!

AGAIN; - Don't call in information, put it all on paper. See page 25 this volume.... COPY and USE IT; PRINT....
Bits of information sent in pieces of paper are always getting mis-placed, incomplete information on them, and not enough data to contact originator.
When I do contact anyone for clarification of information, don't forget to send all, correspondence back that I send. If I haven't received it within 3 weeks of sending it off, all information is permanently filed in #13.

Volume 28 - Yes, I do look ahead a volume at a time. The main reason for hold up on volumes is lack of information/units.
I sometimes get ahold of units to 'play with any way that I want' and turn out some pretty hairy units... One-of-a-kind type modifications that only could be wrote up on about 6 pages! These type only have about 2 pages printed on them, as is really going into the realm of personal preference and very complicated work/craftsmanship.

#28 will have as many modifications as possible on converting over units to the new 28.3-28.5MHz HAM Band. These will not be long drawn out write-ups; but will be for the "Professional Tech" type of information.... Hams, hold on a while and will have it in print for you!

People are always asking/requesting certain parts/data, and wanting immediate shipment by 'Honor Billing'! (Honor Billing; is based upon trust of payment upon receipt.) IT DOESN'T WORK!
I have 'Honor Billings' scattered from N.Y. to Calif.—and even Hawaii; but no more! For this reason have discontinued practice, and require SASE for answering letters requesting information.
NOTE: Friends 'South-of-the-Border, and Europe; business as usual...haven't been 'stiffed' in over 7 years!

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CORRECTION:

Volume 26, page 61: TALKBACK - The diode references are reversed!

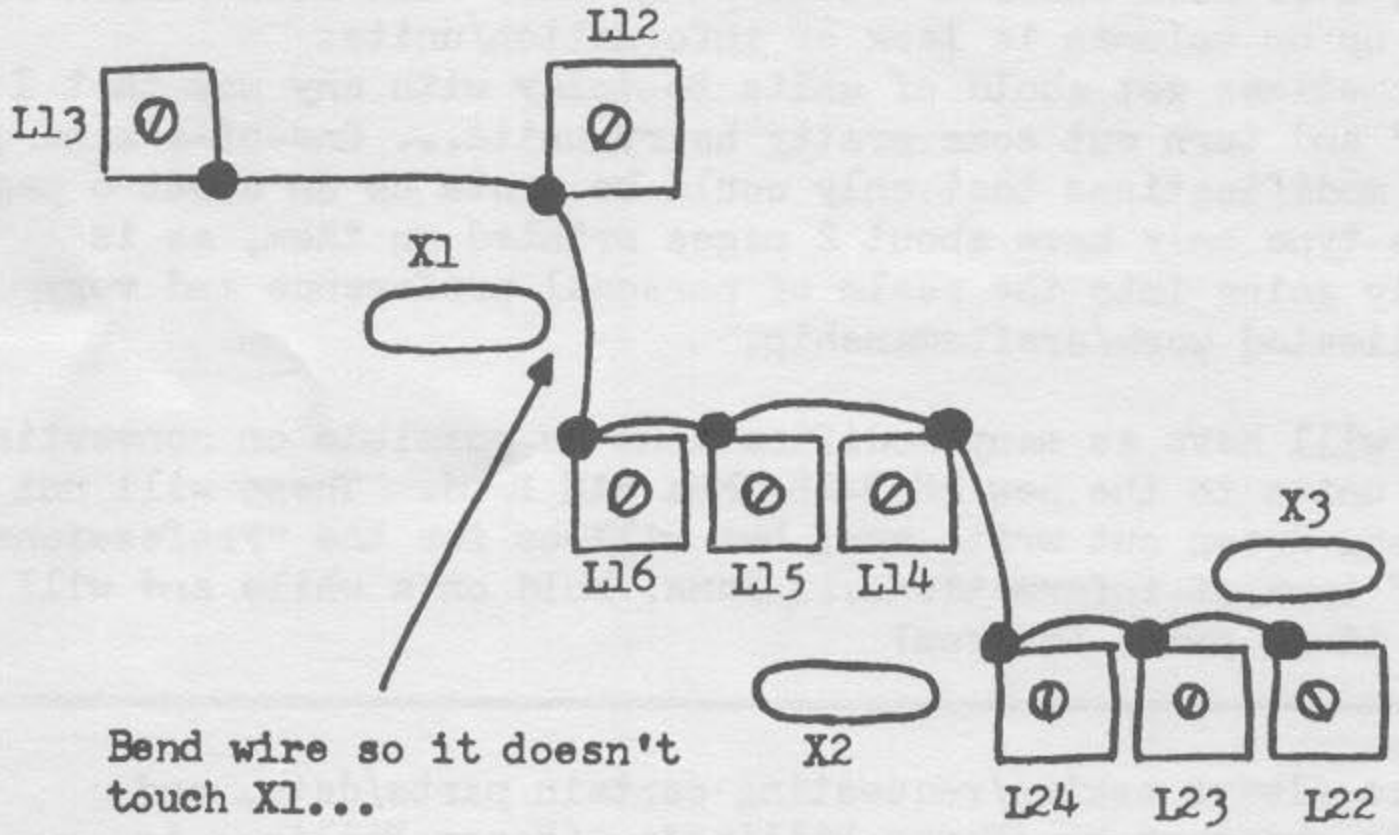
CHANGE: D80 to read D90, and D90 to read D80.

Volume 1, page 60: Original wiring points are 1 and 3. Should be 2 and 4.

THE C TEAM

JACKSON: "COLD" Frequency Drift - Partial Solution

Run a common buss wire between all 'cans' in the PLL/Fo determining section. Note drawing. DO NOT SOLDER TO CRYSTALS....



(by K.P.)

A TRANSISTOR PROTECTED BY A FAST ACTING FUSE, WILL PROTECT THE FUSE BY BLOWING 1st!

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W A N T E D

ORIGINAL; Schematics and/or, Service Manuals listed below.....

DO NOT SEND copies unless...EXCELLENT CAMERA READY QUALITY!

MAIL FLAT, DON'T FOLD; or use a mailing tube.

SEND TO: SECRET CB
P.O. BOX 8189
CORPUS CHRISTI, TEXAS 78412

ALL MATERIAL RECEIVED WILL BE RETURNED BY 1st CLASS MAIL WITHIN 48 HRS.

"Free-bie" volume to those sending requested data from which Printable Information Is Obtained-ONLY! Again, this is 1st received basis.

SCHEMATICS: Radios...

Audiovox. MCB-20
Uniden..... PRO510E, PRO520E, PRO540E, PRO710, PRO310E
Connex. . . . . 3300, 3900, (Owner's Manuals, etc.)
Whistler..... 700, 900,
Ferrari CX-19SA, CX-39SA,
Tenna Phase III . . CB24, CB26, CB22,
FOX CB-240, CB-340, CB-440

MCE MCE523, MCE530, MCE540, MCE570

Midland . . . . . 75-101(FM Transceiver), 75-719B, 75-764B, 75-790, 77-202M, 77-225, 77-250, 77-805, 77-911, 77-911S, 77-915S, 77-106, 77-112, 77-114, 77-145, 77-149, 77-202.

SERVICE MANUALS: Radios....

Concept CD58CB

Midland 79-260

Regency . . . . . UTIL-COM UC-102 (VHF Transceiver)

ORIGINAL SERVICE MANUALS ONLY: Scanners

J.I.L. SX-200, SX-400

REALISTIC . . . . . PRO models: 30, 32, 2002, 2003, 2009, 2010, 2011, 2020,

REGENCY D300, D310, D810
HX-1000, HX-1500, HX-2000, HX-2200, HX-3000
M-100
MX-3000, MX-4000, MX-4200, MX-5000, MX-7000
R-806, R-1040, R-1050, R-1060, R-1070, R-1075, R-1080, R-1090
Z10, Z30, Z45, Z60
INF-1, INF-5
Turbo-Scan 800

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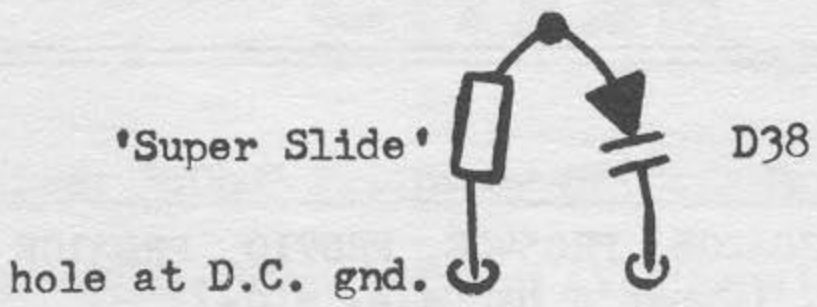
NEW PRODUCT

SECRET CB's JACKSON NOVICE KITS

NOVICE "A": Gives coverage from 26.515-28.755MHz, extended 'slide'.

NOVICE "B": Gives coverage from 26.965-29.205MHz, extended 'slide'.

... Installation: Remove present X2, replace with new xtal. DO NOT CUT XTAL LEADS. Sleeve leads before soldering into place. Bend xtal towards front of chassis. Unsolder the unbanded side of D38, lift upright. Solder new 'SUPER SLIDE' into hole where diode was, the other side is soldered to D38. If additional slide is needed, adjust VR15.



Realign L14, L15, and L16 for desired offsets. L12 and L13 will have to be slightly realigned, in about all units for complete coverage. To align TX and RX sections use Secret CB Volume 20 for a guide. (Special Note: Slight re-alignment was needed on initial units....)

NOVICE "A" FREQUENCY CHART

A -Band		B -Band		C -Band		D -Band		E -Band	
Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency
1	26,515	1	26,965	1	27,415	1	27,865	1	28,315
2	26,525	2	26,975	2	27,425	2	27,875	2	28,325
3	26,535	3	26,985	3	27,435	3	27,885	3	28,335
4	26,555	4	27,005	4	27,455	4	27,905	4	28,355
5	26,565	5	27,015	5	27,465	5	27,915	5	28,365
6	26,575	6	27,025	6	27,475	6	27,925	6	28,375
7	26,585	7	27,035	7	27,485	7	27,935	7	28,385
8	26,605	8	27,055	8	27,505	8	27,955	8	28,405
9	26,615	9	27,065	9	27,515	9	27,965	9	28,415
10	26,625	10	27,075	10	27,525	10	27,975	10	28,425
11	26,635	11	27,085	11	27,535	11	27,985	11	28,435
12	26,655	12	27,105	12	27,555	12	28,005	12	28,455
13	26,665	13	27,115	13	27,565	13	28,015	13	28,465
14	26,675	14	27,125	14	27,575	14	28,025	14	28,475
15	26,685	15	27,135	15	27,585	15	28,035	15	28,485
16	26,705	16	27,155	16	27,605	16	28,055	16	28,505
17	26,715	17	27,165	17	27,615	17	28,065	17	28,515
18	26,725	18	27,175	18	27,625	18	28,075	18	28,525
19	26,735	19	27,185	19	27,635	19	28,085	19	28,535
20	26,755	20	27,205	20	27,655	20	28,105	20	28,555
21	26,765	21	27,215	21	27,665	21	28,115	21	28,565
22	26,775	22	27,225	22	27,675	22	28,125	22	28,575
23	26,805	23	27,255	23	27,705	23	28,155	23	28,605
24	26,785	24	27,235	24	27,685	24	28,135	24	28,585
25	26,795	25	27,245	25	27,695	25	28,145	25	28,595
26	26,815	26	27,265	26	27,715	26	28,165	26	28,615
27	26,825	27	27,275	27	27,725	27	28,175	27	28,625
28	26,835	28	27,285	28	27,735	28	28,185	28	28,635
29	26,845	29	27,295	29	27,745	29	28,195	29	28,645
30	26,855	30	27,305	30	27,755	30	28,205	30	28,655
31	26,865	31	27,315	31	27,765	31	28,215	31	28,665
32	26,875	32	27,325	32	27,775	32	28,225	32	28,675
33	26,885	33	27,335	33	27,785	33	28,235	33	28,685
34	26,895	34	27,345	34	27,795	34	28,245	34	28,695
35	26,905	35	27,355	35	27,805	35	28,255	35	28,705
36	26,915	36	27,365	36	27,815	36	28,265	36	28,715
37	26,925	37	27,375	37	27,825	37	28,275	37	28,725
38	26,935	38	27,385	38	27,835	38	28,285	38	28,735
39	26,945	39	27,395	39	27,845	39	28,295	39	28,745
40	26,955	40	27,405	40	27,855	40	28,305	40	28,755

NOVICE "B" FREQUENCY CHART

A -Band		B -Band		C -Band		D -Band		E -Band	
Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency
1	26,965	1	27,415	1	27,865	1	28,315	1	28,765
2	26,975	2	27,425	2	27,875	2	28,325	2	28,775
3	26,985	3	27,435	3	27,885	3	28,335	3	28,785
4	27,005	4	27,455	4	27,905	4	28,355	4	28,805
5	27,015	5	27,465	5	27,915	5	28,365	5	28,815
6	27,025	6	27,475	6	27,925	6	28,375	6	28,825
7	27,035	7	27,485	7	27,935	7	28,385	7	28,835
8	27,055	8	27,505	8	27,955	8	28,405	8	28,855
9	27,065	9	27,515	9	27,965	9	28,415	9	28,865
10	27,075	10	27,525	10	27,975	10	28,425	10	28,875
11	27,085	11	27,535	11	27,985	11	28,435	11	28,885
12	27,105	12	27,555	12	28,005	12	28,455	12	28,905
13	27,115	13	27,565	13	28,015	13	28,465	13	28,915
14	27,125	14	27,575	14	28,025	14	28,475	14	28,925
15	27,135	15	27,585	15	28,035	15	28,485	15	28,935
16	27,155	16	27,605	16	28,055	16	28,505	16	28,955
17	27,165	17	27,615	17	28,065	17	28,515	17	28,965
18	27,175	18	27,625	18	28,075	18	28,525	18	28,975
19	27,185	19	27,635	19	28,085	19	28,535	19	28,985
20	27,205	20	27,655	20	28,105	20	28,555	20	29,005
21	27,215	21	27,665	21	28,115	21	28,565	21	29,015
22	27,225	22	27,675	22	28,125	22	28,575	22	29,025
23	27,255	23	27,705	23	28,155	23	28,605	23	29,055
24	27,235	24	27,685	24	28,135	24	28,585	24	29,035
25	27,245	25	27,695	25	28,145	25	28,595	25	29,045
26	27,265	26	27,715	26	28,165	26	28,615	26	29,065
27	27,275	27	27,725	27	28,175	27	28,625	27	29,075
28	27,285	28	27,735	28	28,185	28	28,635	28	29,085
29	27,295	29	27,745	29	28,195	29	28,645	29	29,095
30	27,305	30	27,755	30	28,205	30	28,655	30	29,105
31	27,315	31	27,765	31	28,215	31	28,665	31	29,115
32	27,325	32	27,775	32	28,225	32	28,675	32	29,125
33	27,335	33	27,785	33	28,235	33	28,685	33	29,135
34	27,345	34	27,795	34	28,245	34	28,695	34	29,145
35	27,355	35	27,805	35	28,255	35	28,705	35	29,155
36	27,365	36	27,815	36	28,265	36	28,715	36	29,165
37	27,375	37	27,825	37	28,275	37	28,725	37	29,175
38	27,385	38	27,835	38	28,285	38	28,735	38	29,185
39	27,395	39	27,845	39	28,295	39	28,745	39	29,195
40	27,405	40	27,855	40	28,305	40	28,755	40	29,205

Order these new Jackson Novice Kits @ $9.00 ea. SELMAN ENTERPRISES, P.O. Box 8189, Corpus Christi, TX 78412 or Call 512/853-2935.

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A TECHNICIAN'S PRAYER

I HOPE THAT I SHALL NEVER SEE
A RADIO THAT GETS THE BEST OF ME.
REMOVING THE KNOBS AND EVERY SCREW,
IS JUST A LITTLE TASK TO DO.
THERE ARE METERS TO SET; RIGHT ON THE SPOT,
MAKE SURE THE SOLDERING IRON IS GOOD AND HOT!
EVERY RADIO IS DIFFERENT IN ITS OWN SPECIAL WAY,
SOME MAY TAKE AN HOUR, SOME MAY TAKE A DAY.
THEN THERE ARE SOME THAT MAY TAKE A WEEK TO MAKE TICK,
BECAUSE OF A GOLDEN SCREWDRIVER THAT HAS MADE IT
TERRIBLY SICK.
THERE IS TRACING AND TUNING AND PULLING YOUR HAIR,
AND LOOKING IN BOOKS AND BOOKS TO SPARE.
BEFORE YOU KNOW IT AN HOUR HAS TURNED INTO A DAY,
AND TIME HAS SLIPPED BY IN A GREAT BIG WAY.
THE RADIO IS TALKING AND REALLY 10-8.
BUT THE OWNER SAYS, "SORRY, YOU'LL HAVE TO WAIT."
"I HAD NO IDEA IT WOULD COST SO MUCH,
AS THIS RADIO HAD HARDLY BEEN TOUCHED."
TRYING TO BE CHEERFUL, AND NOT ACT TOO FUNNY,
THEY POLITELY ASK IF YOU CAN WAIT FOR THE MONEY.
THE TIME THAT WAS SPENT FOR THE REPAIR
NO LONGER EXISTS; IT JUST WASN'T THERE!
THE LAST FEW BUCKS THAT YOU COULD SPARE,
WAS SPENT ON PARTS TO MAKE THE REPAIR.
EVERYBODY NEEDS TIME AT ONE TIME OR ANOTHER.
FOR THIS AND THAT OR THE OTHER.
MY EXPERIENCE, MY TOOLS AND MY <u>TIME</u> ARE MINE,
IF IT'S NOT WORTH THE MONEY,
THEN DON'T WASTE MY TIME!

BY: BRENDA PHILPOTT
(JAWBREAKER)
(CH. 8)

DEDICATED TO ALL OF THE TECHNICIANS ALL OVER THE WORLD

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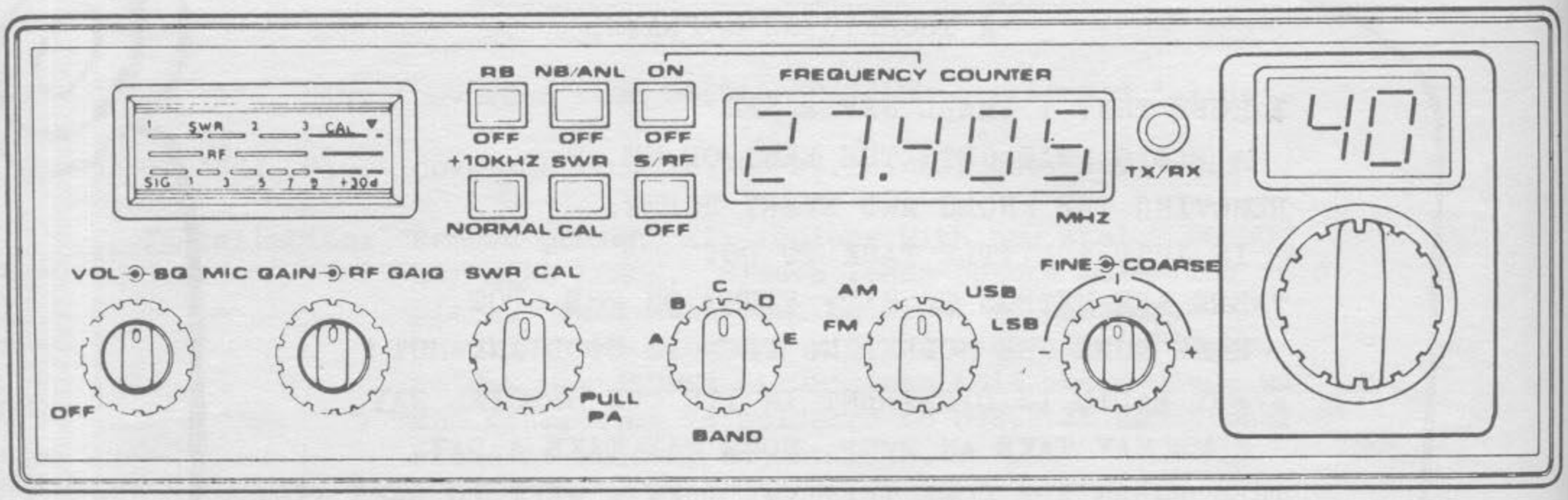
SUPER GALAXY (EXPORT)



'HIGH POWERED' AM/FM/SSB 200 Ch. Mobile. MC145106-PLL, Switchable Beep, +10KHz jump, 26.065-28.325MHz Fo Range, 5 digit Fo Counter, and dual clarifier.

Owner's Manual is very good (read it!); BUT; again - NO SCHEMATIC!

NOT TO WORRY; AS I HAVE HEARD THAT CERTAIN 'DEALERS' PROVIDE WITH UNIT IF YOU PURCHASE FROM THEM. SCHEMATIC WILL NOT BE PRINTED IN SECRET C.B.

Unit is basically an old Galaxy 2100 with some updates. Frequency Counter has been redesigned, and PCB altered to take the Grant-DX transmit design. "Why the CW function was left out of this unit I don't know? Hams love to find these units screwdrivered to death, then change crystal to take it up to the 28-30MHz range."

OUT-OF-THE-BOX: S/N 000183. Cover (etch side) didn't mate up and bowed. Wrong type screw found in unit? (Flush vs regular round type.) Piece of tape also on covers with word SEAL on it (may be removed without tearing if careful. S/N tape was placed across both covers and rear of chassis? (I removed it also and placed on inside of cover next to speaker.)
The THICK white insulators are back in fashion! Bridging board (T7, T8, T9); had the pins bent over towards VR8-check and straighten! On right rear of component side make sure collector of TR50 isn't shorting to nut of bolt going to chassis ground of TR51. In general check out and straighten things up before applying the power.
Power readings (out-of-the-box) at 27.185MHz, Fo Counter reading:

AM - 7W (modulation at max mike gain was 100%+)
FM - 6.9W (level of audio insufficient)
SSB - 4W at max mike gain?

Here's the real _isser! Why use a 4 position mode switch and not change the front panel lettering to correspond. The lettering is set for the old 5 pos. switch. (The units with CW!)
Turned up power adjustments to maximum for a momentary RF Power output test:

AM - 13.7W, SSB - 20.0W.

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SUPER GALAXY (EXPORT)...Cont.

Clarifiers dead center: 27.185 on counter, actual 27.185.8MHz (800Hz off).
Max clarifiers (+10.3KHz), counter off by 300Hz.
Min clarifiers (- 7.6KHz), counter off by 400Hz.
Since this is only a 5 digit counter isn't of any real consequence; can be tightened up in an alignment; as all readings were high.

SWR calibration was excellent!

RF Power rolloff: Ref. 4W at center Fo; 2.8W at Min Fo; 3.9W at Max Fo.

?? Next to last digit in the Frequency Counter went out with approximately 1½ hrs of time on unit. ??

?? When replacing the covers noticed that not only didn't they mate up; BUT; were entirely painted/finished differently. ??

FOR ALIGNMENT PROCEEDURE: Compare Schematic/Alignment Section for each;
PLL - use the Jackson alignment, PLL section.
TRANSMIT - use the Grant-DX alignment, Transmit section.
RECEIVE - use the Excalibur SSB alignment, Receive section.
NOTE: Compare each section with both schematics as a guide.....

SELECT-A-WATT OR DIAL-A-WATT

By Jim's CB Tech's & Frank Fournier

SELECT OR DIAL-A-WATT IS A METHODE OF DOING TWO THINGS. 1. Making a unit drive at the proper level to feed an amplifier while having a peaked unit when the amplifier is not being used. 2. A way of lowering the carrier level of a unit while maintaining all of the PEP swing of the audio.

Almost every AM unit has an anti-spiking diode on the output of the audio transformer. This is where the DC is fed to the driver and final. The reason it is there is to prevent the RF positive spikes

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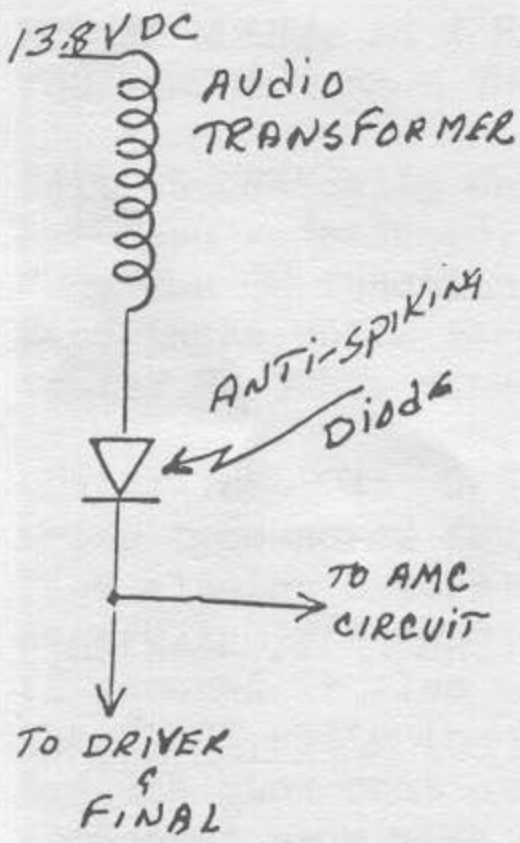
from exceeding the insulation factor of the audio transformer, causing shorting between the primary and secondary. This diode is generally a 1 amp. 600V Peak reverse (PRV). This is also about the same as most of the protection diodes. Most of you have these by the dozens in your shop, if not hundreds.

Silicone diodes require about .7 foward voltage to begain conduction. This means, if we put two such diodes in series, it would require about 1.4 Volts to start conduction, three, 2.1 Volts, etc.

As you know, as you lower the voltage on the driver and final of a unit, your wattage output on dead key will drop. The audio swing in this case will not drop because the diodes are already foward biased. Any positive swing will be coupled through 1:1.



We can lift the cathode of the Anti-spiking diode and add as many diodes in series as we desire. We can have as many levels of carrier as the number of diodes we install.

Let's start with a simple SPDT switch. It will give us two levels. Peaked level for normal operation and a lower level, say, for driving a amplifier. Let's say it takes three diodes to give us the desired level of drive for the amplifier. With the SPDT switch closed you will have peaked condition. Let's say 6 watts swinging 18 watts. With the switch open, it might drop to 3 watts but the swing will be 15 watts.

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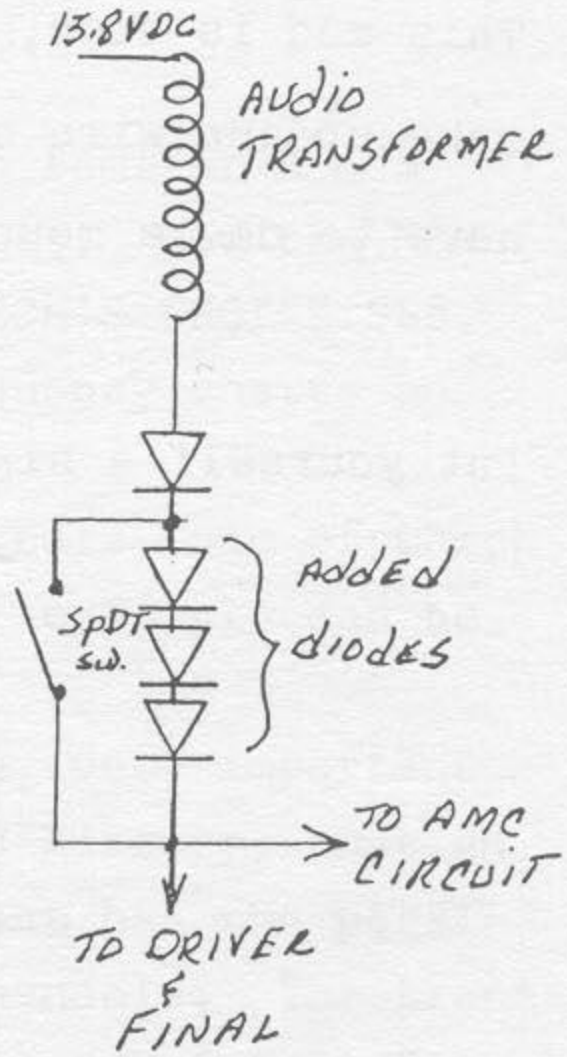
Now let us consider a DPDT switch with center off. This could give us three levels.

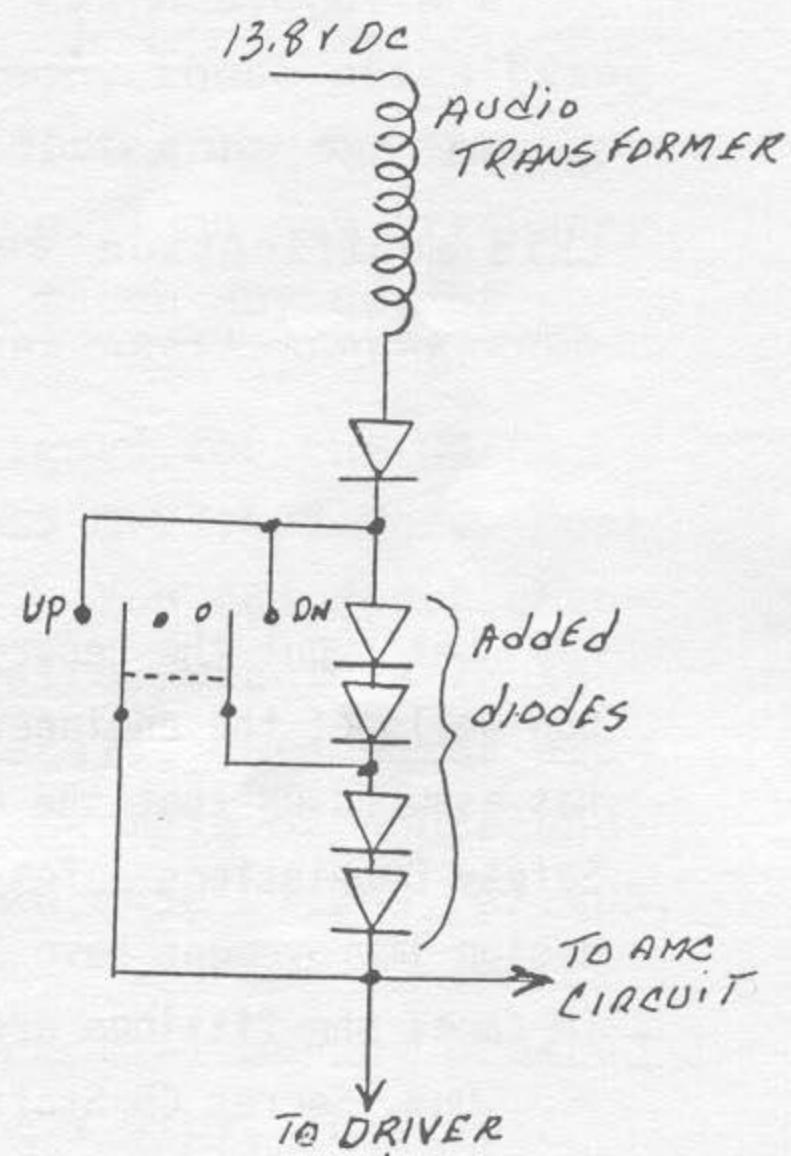
Up, would give peaked condition. Down would give a lower level, and center would give the lowest level.

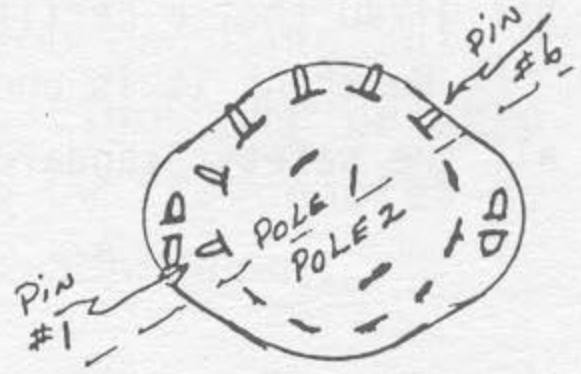
Now for those of you that have followed our suggestion and bought yourself a set of hand punches and would like to be more professional, you might want to try Dial-A-Watt. For this we would like to suggest a 2 pole, 6 position switch such as Mouser's # 10WK026. It is a printed circuit switch but the layout on this switch is easier.

1. Lay the outside terminals of one pole out at about a 45 degree angle.
2. Bend the legs of five diodes as illistrated leaving the legs about 3/8" long.
3. Starting at pin #1, solder the diodes between 1 and 2, 2 and 3, 3 and 4, 4 and 5, 5 and 6, with the cathodes toward pin 6.
4. Mount the switch.
5. Lift the cathode of the anti-spiking diode.
6. Run a wire from the raised cathode to pin 1.
7. Run a wire from where the cathode was raised from to the common terminal and to pin 6.

Now as you rotate the knob CW, the wattage out will increase. As you rotate CCW it will decrease.







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This mod is such, that when you have spare-time in your shop, you can make up and wire a few of these switches in advance. Then all you have to do is mount the switch and wire it in.

SUGGESTION

Put yourself a sign in your shop.

DIAL-A-WATT
SIX LEVELS.....$??.00
SELECT-A-WATT
THREE LEVELS....$??.00
TWO LEVELS.....$??.00

An average shop should make an extra thousand dollars or more off of this modification each year.

****

ANTRON "99"

Let's put the record straight about the ANTRON "99" CB base station antennas. Don Wells of the engineering department for Antron Antenna Research & Electronics has assured us that the ANTRON "99" does meet all the U.S. Consumer Product Safety Commissions safety standards and more. He tells us that engineering and design improvement have been made and they are now using all brass fittings. In fact, the fittings are all machined from solid brass. No more diecasting.

Our, Secret CB Staff, inquiry to the manufacturer, Antron Antenna Research & Electronics, was after we read an article in the May 1987 Issue of AudioVideo International. Seems the USCPSC had tested several over a period of time and all met the safety standards. Then early 1986 they came back for another testing and found a problem. The antennas in that batch were recalled. Since then the improvements have been made and the U.S. Consumer Product Safety Commission has given them a certificate of recommendation for a job well done.

We think it is one of the best base antennas made that will more than meet all the safety standards. It is a very good matchup to the EXPORT units.

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NEW PRODUCT INFORMATION:

Card-Kit Electronics first came out with the familar A & B Kits, then the LTD Kit for the new Cobra Plus units. Now the NEW "C" & "D" NOVICE KIT and the TECH'S CHOICE AM, TECH'S CHOICE SSB, TECH'S CHOICE DX. See radio correlation and frequency charts on the following pages.

The "C" & "D" NOVICE kits come with two crystals, one of which covers the Ham Novice Band. Other combination of crystals can be used in this kit.

The COBRA 21, 25, and 29 PLUS units have one, very important redeaming feature. This is the first time, in CB History, that an AM unit has been marketed in the United States that has the possibilities of covering more than a hundred or so channels. The transmitters and receivers of these units can cover the A,B,C,D, & E European bands without retuning. For this reason, these units bring with them a whole world of possibilities in modifications. The Cobra Plus units can be modified to start channel 1 on any frequency between 26.065 and 27.865. This means you can match any set of frequencies that your customers are now using.

The Tech's Choice AM Kit is specially designed for the COBRA PLUS units. It comes with two crystals - 26.515 & 27.425 Mhz. Most often they will be used in the B & D positions. You can start channel 1 on any channel or half channel you so desire, within a 2Mhz span. There are standard and non-standard crystals. Standards are 26.065, 26.515, 27.415, 27.425,and 27.865Mhz. Example of non-standards or specials are 26.325, 26.505, 26.510, 26.645, 27.285, 27.405, etc., any frequency in 5Khz steps.

These special cut crystals (standard or special) may be ordered from Card-Kit Electronics, 306 Wilson Ave, Panama City, FL 32401. 1-800-227-3548. Standard $4.00 each and Special $5.00 each.

The Tech's Choice SSB Kit is the easiest to install and align kit ever devised for a SSB unit. It too is the most versatile. You are not locked into a given set of frequencies. You are only limited by the Band Pass of the Transmitter and Receiver, which in the case of the Cobra 146GTL is about 3Mhz. This means you can make this unit up for a HAM and give him or her a HAM/CB combination. It being a mobile, he or she might not be interested in the CW frequencies so you can skip over them and still come within the 3Mhz span.

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There is no limit to the combinations and possibilities.

Why even sell an Export Unit when you can buy a unit for much less with easy maintenance, good parts supply and proven reliability. No longer will you have to modify the clarifier and no longer will the operator have to have a frequency counter to find out what frequency they are on. You just make them a list of frequencies for each crystal or selector position starting with channel 1 as marked in black on the crystal used.

We at Secret CB and Card-Kit see a brighter future for CBing and for the American Companies that supply them. We are sure you will feel the same when you start using these kits.

The Tech's Choice Kits are not designed for the hobbist, but especially for technicians. The special tools and equipment needed makes that difference.

Special tools needed: Hand Punch Sets can be ordered from MSC Industrial Supply Co., 800-645-7270. 3/32" to 9/32" order #937102 and 5/32" to 17/32" order #927105. A 40 Mhz or above scope such as the B&K 1540 is needed.

John, at Card-Kit Electronics, says: "If I could ever give one piece of advice that would save you time and make your work easier, it would be to 'MAKE YOURSELF A TEST SET'." You can make it either from a Cobra 142GTL or Cobra 2000GTL. If you want something that will give you even a greater span and cheaper, modify a Cobra 146GTL or a Uniden PC244 and combine the switching of a "C" Kit with the TC-SSB Kit to give you up to 480 channels. Too, you will find the zero beat a plus when it comes to checking a sideband unit. When you make your test set, put it on a 50 ohm load with about a two foot coax. The ambiant radiation will be enough to pick up a good strong signal several feet away.

GOOD LUCK AND GOOD TESTING!

Order these CARD-KITS from Selman Enterprises, Inc., P.O. Box 8189, Corpus Christi, Texas 78412 or Call 512/853-2935.

Ask for a SECRET CB CATALOG when you order or send $1.00 which is refundable on your first order.

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RADIO AND CARD-KITS CORRELATION CHART

Card-Kit

A

COBRA 18LTD
COBRA 18 PLUS
COBRA 19 PLUS
COBRA 19 X
COBRA 19 XS
COBRA 20LTD
COBRA 20 PLUS
COBRA 21GTL
COBRA 21LTD
COBRA 21 PLUS
COBRA 25GTL
COBRA 25LTD
COBRA 25 PLUS
COBRA 29GTL
COBRA 29LTD
COBRA 29 PLUS
COBRA 40 X
COBRA 40 PLUS
COBRA 90LTD
COLT 190
COLT 210
COLT 222
COLT 355
GE 3-5804F
GE 3--5805A
GE 3-5816D
K-40 K-401
MAXCOM 4-A
MIDLAND 100M
MIDLAND 102M
MIDLAND 103M
MIDLAND 151M
MIDLAND 200M
MIDLAND 2001
MIDLAND 3001
MIDLAND 4001
MIDLAND 77-824B
MIDLAND 77-800
PRESIDENT AR-7
PRESIDENT AX-7
PRESIDENT AX-11
PRESIDENT AX-43
PRESIDENT AX-44
PRESIDENT AR-44
PRESIDENT AR-711
PRESIDENT AX-711
PRESIDENT ANDREW J.
PRESIDENT JAMES K.
PRESIDENT "OLD HICKORY"
PRESIDENT ZACHARY T.
PRESIDENT SEAHAWK-40
REALISTIC TRC-410
REALISTIC TRC-414
REALISTIC TRC-421
REALISTIC TRC-421A
REALISTIC TRC-422
REALISTIC TRC-422A
REALISTIC TRC-426
REALISTIC TRC-427
REALISTIC TRC-428
REALISTIC TRC-432
REALISTIC TRC-441
REALISTIC TRC-473
REALISTIC TRC-474
TEABERRY STALKER 3
UNIDEN PC-33
UNIDEN PC-33A
UNIDEN PC-55
UNIDEN PC-55A
UNIDEN PC-66
UNIDEN PC-77
AND OTHER SISTER UNITS OF THE ABOVE

B

COBRA 18LTD
COBRA 18 PLUS
COBRA 19X
COBRA 19XS
COBRA 19 PLUS
COBRA 20LTD
COBRA 20 PLUS
COBRA 40X
COBRA 40 PLUS
COBRA 90LTD
COLT 190
COLT 210
COLT 222
COLT 355
CRAIG L-104
CAIG L-105
GE 3-5804B
GE 3-5805F
GE 3-5805A
GE 3-5805B
GE 3-5816D
K-40's K-401
MAXCOM 4-A
MIDLAND 100M
MIDLAND 102M
MIDLAND 103M
MIDLAND 150M
MIDLAND 151M
MIDLAND 800M
MIDLAND 2001
MIDLAND 3001
MIDLAND 4001
MIDLAND 77-101B
MIDLAND 77-101C
MIDLAND 77-800
MIDLAND 77-824B
MIDLAND 77-824C
MIDLAND 77-856
MIDLAND 77-860
MIDLAND 77-861B
NDI PC-101
NDI PC-102
PRESIDENT AR-7
PRESIDENT AX-7
PRESIDENT AX-11
REALISTIC TRC-410
REALISTIC TRC-414
REALISTIC TRC-420
REALISTIC TRC-420A
REALISTIC TRC-421
REALISTIC TRC-421A
REALISTIC TRC-422
REALISTIC TRC-422A
REALISTIC TRC-426
REALISTIC TRC-427
REALISTIC TRC-432
REALISTIC TRC-441
REALISTIC TRC-462
REALISTIC TRC-469
REALISTIC TRC-473
REALISTIC TRC-747
SBE LCB-8
SHARP CB-2170
SHARP CB-4370
SHARP CB-4470
SHARP CB-4670
TEABERRY STALKER 3
TEABERRY STALKER V
TEABERRY STALKER VII
TEABERRY STALKER XII
TRS-730
TRS-1200
WARD-680A
WARD-696A
UNIDEN PC-33
UNIDEN PC-33A
UNIDEN PC-55
UNIDEN PC-55A
USACO U900CB
AND OTHER SISTER UNITS OF THE ABOVE

C

COBRA 146GTL
MIDLAND 6001 (79-006)
MIDLAND 7001 (79-007)
PRESIDENT AR-144
PRESIDENT AX-144
REALISTIC TRC-451
REALISTIC TRC-453
SEARS 663.38100050
UNIDEN PC-122
UNIDEN AX-144
AND OTHER SISTER UNITS

D

COBRA 140GTL
COBRA 142GTL
COBRA 148GTL
COBRA 200GTL
PRESIDENT GRANT
PRESIDENT MADISON
PRESIDENT WASHINGTON
UNIDEN GRANT
UNIDEN MADISON
UNIDEN WASHINGTON
REALISTIC TRC-490
AND OTHER SISTER UNITS

LTD

COBRA 21GTL
COBRA 21LTD
COBRA 21 PLUS
COBRA 25GTL
COBRA 25LTD
COBRA 25 PLUS
COBRA 29GTL
COBRA 29LTD
COBRA 29 PLUS
COBRA 87GTL
COBRA 89GTL
COBRA 1000GTL
PRESIDENT AX-43
PRESIDENT AR-44
PRESIDENT AX-44
PRESIDENT AR-711
PRESIDENT AX-711
PRESIDENT SEAHAWK 40
PRESIDENT ZACHARY T.
UNIDEN PC-66
UNIDEN PC-77
UNIDEN ZACHARY T.
AND OTHER SISTER UNITS

TECH'S CHOICE (TC AM)
COBRA 21 PLUS
COBRA 25 PLUS
COBRA 29 PLUS
AND OTHER SISTER UNITS

TECH'S CHOICE (TC SSB)
COBRA 146GTL
MIDLAND 6001 (79-006)
MIDLAND 7001 (79-007)
PRESIDENT AR-144
PRESIDENT AX-144
REALISTIC TRC-451
REALISTIC TRC-543
SEARS 663.38100050
UNIDEN PC-122
UNIDEN AX-144
AND OTHER SISTER UNITS

TECH'S CHOICE (TC DX)
COBRA 140GTL
COBRA 142GTL
COBRA 148GTL
COBRA 2000GTL
PRESIDENT GRANT
PRESIDENT MADISON
PRESIDENT WASHINGTON
UNIDEN GRANT
UNIDEN MADISON
UNIDEN WASHINGTON
REALISTIC TRC-490

AND OTHER SISTER UNITS.

A KIT—HIGH COVERAGE ONLY CH. 42 THRU 86

B KIT—LOW COVERAGE ONLY 26.515 THRU 26.955

LTD KIT—COVERS LOW AND HIGH FOR THOSE UNITS THAT HAVE TIGHT 1st. IF AND WOULD HAVE A GAIN LOSS IF THE B KIT WAS USED.

C KIT AND TC SSB KITS COVER THE SAME UNITS.

D KIT AND TC DX KITS COVER THE SAME UNITS.

THE C AND D KITS ARE BASICALLY DESIGNED TO GIVE ONE EXTRA 40 CHANNEL GROUP ANYWHERE WITHIN THE BAND-PASS OF THE RECEIVER AND TRANSMITTER. THE TC SSB AND TC DX IS BASICALLY DESIGNED TO GIVE 400 EXTRA CHANNELS AND IS DESIGNED BASICALLY FOR TECHNICIANS BECAUSE OF THE SPECIAL SKILL AND TOOL REQUIREMENTS.

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CARD-KITS FREQUENCY CHART

	a	A	b	B	c	C	d	D	D+	e	E
1	26.060	26.065	26.510	26.515	26.960	26.965	27.410	27.415	27.425	27.860	27.865
2	26.070	26.075	26.520	26.525	26.970	26.975	27.420	27.425	27.435	27.870	27.875
3	26.080	26.085	26.530	26.535	26.980	26.985	27.430	27.435	27.445	27.880	27.885
4	26.100	26.105	26.550	26.555	27.000	27.005	27.450	27.455	27.465	27.900	27.905
5	26.110	26.115	26.560	26.565	27.010	27.015	27.460	27.465	27.475	27.910	27.915
6	26.120	26.125	26.570	26.575	27.020	27.025	27.470	27.475	27.485	27.920	27.925
7	26.130	26.135	26.580	26.585	27.030	27.035	27.480	27.485	27.495	27.930	27.935
8	26.150	26.155	26.600	26.605	27.050	27.055	27.500	27.505	27.515	27.950	27.955
9	26.160	26.165	26.610	26.615	27.060	27.065	27.510	27.515	27.525	27.960	27.965
10	26.170	26.175	26.620	26.625	27.070	27.075	27.520	27.525	27.535	27.970	27.975
11	26.180	26.185	26.630	26.635	27.080	27.085	27.530	27.535	27.545	27.980	27.985
12	26.200	26.205	26.650	26.655	27.100	27.105	27.550	27.555	27.565	28.000	28.005
13	26.210	26.215	26.660	26.665	27.110	27.115	27.560	27.565	27.575	28.010	28.015
14	26.220	26.225	26.670	26.675	27.120	27.125	27.570	27.575	27.585	28.020	28.025
15	26.230	26.235	26.680	26.685	27.130	27.135	27.580	27.585	27.595	28.030	28.035
16	26.250	26.255	26.700	26.705	27.150	27.155	27.600	27.605	27.615	28.050	28.055
17	26.260	26.265	26.710	26.715	27.160	27.165	27.610	27.615	27.625	28.060	28.065
18	26.270	26.275	26.720	26.725	27.170	27.175	27.620	27.625	27.635	28.070	28.075
19	26.280	26.285	26.730	26.735	27.180	27.185	27.630	27.635	27.645	28.080	28.085
20	26.300	26.305	26.750	26.755	27.200	27.205	27.650	27.655	27.665	28.100	28.105
21	26.310	26.315	26.760	26.765	27.210	27.215	27.660	27.665	27.675	28.110	28.115
22	26.320	26.325	26.770	26.775	27.220	27.225	27.670	27.675	27.685	28.120	28.125
23	26.350	26.355	26.800	26.805	27.250	27.255	27.700	27.705	27.715	28.150	28.155
24	26.330	26.335	26.780	26.785	27.230	27.235	27.680	27.685	27.695	28.130	28.135
25	26.340	26.345	26.790	26.795	27.240	27.245	27.690	27.695	27.705	28.140	28.145
26	26.360	26.365	26.810	26.815	27.260	27.265	27.710	27.715	27.725	28.160	28.165
27	26.370	26.375	26.820	26.825	27.270	27.275	27.720	27.725	27.735	28.170	28.175
28	26.380	26.385	26.830	26.835	27.280	27.285	27.730	27.735	27.745	28.180	28.185
29	26.390	26.395	26.840	26.845	27.290	27.295	27.740	27.745	27.755	28.190	28.195
30	26.400	26.405	26.850	26.855	27.300	27.305	27.750	27.755	27.765	28.200	28.205
31	26.410	26.415	26.860	26.865	27.310	27.315	27.760	27.765	27.775	28.210	28.215
32	26.420	26.425	26.870	26.875	27.320	27.325	27.770	27.775	27.785	28.220	28.225
33	26.430	26.435	26.880	26.885	27.330	27.335	27.780	27.785	27.795	28.230	28.235
34	26.440	26.445	26.890	26.895	27.340	27.345	27.790	27.795	27.805	28.240	28.245
35	26.450	26.455	26.900	26.905	27.350	27.355	27.800	27.805	27.815	28.250	28.255
36	26.460	26.465	26.910	26.915	27.360	27.365	27.810	27.815	27.825	28.260	28.265
37	26.470	26.475	26.920	26.925	27.370	27.375	27.820	27.825	27.835	28.270	28.275
38	26.480	26.485	26.930	26.935	27.380	27.385	27.830	27.835	27.845	28.280	28.285
39	26.490	26.495	26.940	26.945	27.390	27.395	27.840	27.845	27.855	28.290	28.295
40	26.500	26.505	26.950	26.955	27.400	27.405	27.850	27.855	27.865	28.300	28.305

	n	N	f	F	g	G	h	H
1	28.060	28.065	28.310	28.315	28.760	28.765	29.210	29.215
2	28.070	28.075	28.320	28.325	28.770	28.775	29.220	29.225
3	28.080	28.085	28.330	28.335	28.780	28.785	29.230	29.235
4	28.100	28.105	28.350	28.355	28.800	28.805	29.250	29.255
5	28.110	28.115	28.360	28.365	28.810	28.815	29.260	29.265
6	28.120	28.125	28.370	28.375	28.820	28.825	29.270	29.275
7	28.130	28.135	28.380	28.385	28.830	28.835	29.280	29.285
8	28.150	28.155	28.400	28.405	28.850	28.855	29.300	29.305
9	28.160	28.165	28.410	28.415	28.860	28.865	29.310	29.315
10	28.170	28.175	28.420	28.425	28.870	28.875	29.320	29.325
11	28.180	28.185	28.430	28.435	28.880	28.885	29.330	29.335
12	28.200	28.205	28.450	28.455	28.900	28.905	29.350	29.355
13	28.210	28.215	28.460	28.465	28.910	28.915	29.360	29.365
14	28.220	28.225	28.470	28.475	28.920	28.925	29.370	29.375
15	28.230	28.235	28.480	28.485	28.930	28.935	29.380	29.385
16	28.250	28.255	28.500	28.505	28.950	28.955	29.400	29.405
17	28.260	28.265	28.510	28.515	28.960	28.965	29.410	29.415
18	28.270	28.275	28.520	28.525	28.970	28.975	29.420	29.425
19	28.280	28.285	28.530	28.535	28.980	28.985	29.430	29.435
20	28.300	28.305	28.550	28.555	29.000	29.905	29.450	29.455
21	28.310	28.315	28.560	28.565	29.010	29.915	29.460	29.465
22	28.320	28.325	28.570	28.575	29.020	29.025	29.470	29.475
23	28.350	28.355	28.600	28.605	29.050	29.055	29.500	29.505
24	28.330	28.335	28.580	28.585	29.030	29.035	29.480	29.485
25	28.340	28.345	28.590	28.595	29.040	29.045	29.490	29.495
26	28.360	28.365	28.610	28.615	29.060	29.065	29.510	29.515
27	28.370	28.375	28.620	28.625	29.070	29.075	29.520	29.525
28	28.380	28.385	28.630	28.635	29.080	29.085	29.530	29.535
29	28.390	28.395	28.640	28.645	29.090	29.095	29.540	29.545
30	28.400	28.405	28.650	28.655	29.100	29.105	29.550	29.555
31	28.410	28.415	28.660	28.665	29.110	29.115	29.560	29.565
32	28.420	28.425	28.670	28.675	29.120	29.125	29.570	29.575
33	28.430	28.435	28.680	28.685	29.130	29.135	29.580	29.585
34	28.440	28.445	28.690	28.695	29.140	29.145	29.590	29.595
35	28.450	28.455	28.700	28.705	29.150	29.155	29.600	29.605
36	28.460	28.465	28.710	28.715	29.160	29.165	29.610	29.615
37	28.470	28.475	28.720	28.725	29.170	29.175	29.620	29.625
38	28.480	28.485	28.730	28.735	29.180	29.185	29.630	29.635
39	28.490	28.495	28.740	28.745	29.190	29.195	29.640	29.645
40	28.500	28.505	28.750	28.755	29.200	29.205	29.650	29.655

NOVICE KEY

NOVICE VOICE

A KIT Coverage—column D+.

B KIT Coverage—column b or columns b & B.

C KIT Coverage—(without additional switching) any two columns within the band-pass of the unit.

D KIT Coverage—(without additional switching) any two columns within the band-pass of the unit.

LTD KIT Coverage—columns b & between D & D+ or columns B & D+.

TC AM KIT Coverage—column C and any other three columns within the band-pass of the unit.

TC SSB Coverage—any ten columns within the band-pass of the unit.

TC DX Coverage—any ten columns within the band-pass of the unit.

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DAK 10, Power/Modulation Increase

by T.C.

Modification below is proven for unit, as has been in constant operation for over 10 months with no problems....(T.C.)

1. Remove 12BY7, driver - replace with 12GN7.

2. Remove 6DG6, final - replace with 6550.

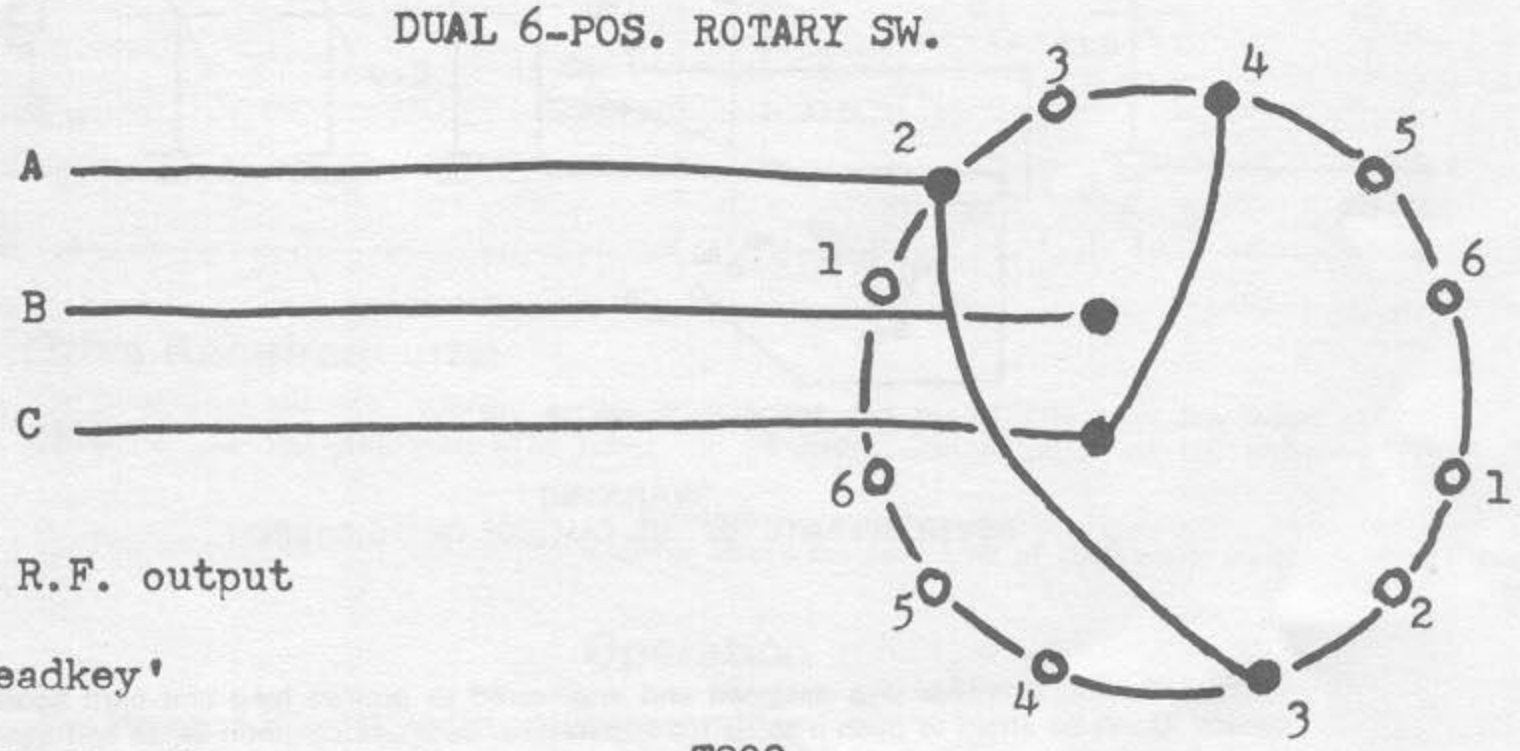
3. Adjust L201, L902, and C903 for max RF on PEAK READING METER.

4. RV12, RV204 are AMC adjustments. RV2 and RV11 are ALC.

5. SSB output may be increased to about 30W PEP by jumping R211, 3.9K 2W. (Ed. Note: suggest changing resistor to a 220 ohm, 2W instead.)

6. Make up 6-position switch and install as per drawing. NOTE: perfect location of switch is the headphone jack position.

DUAL 6-POS. ROTARY SW.



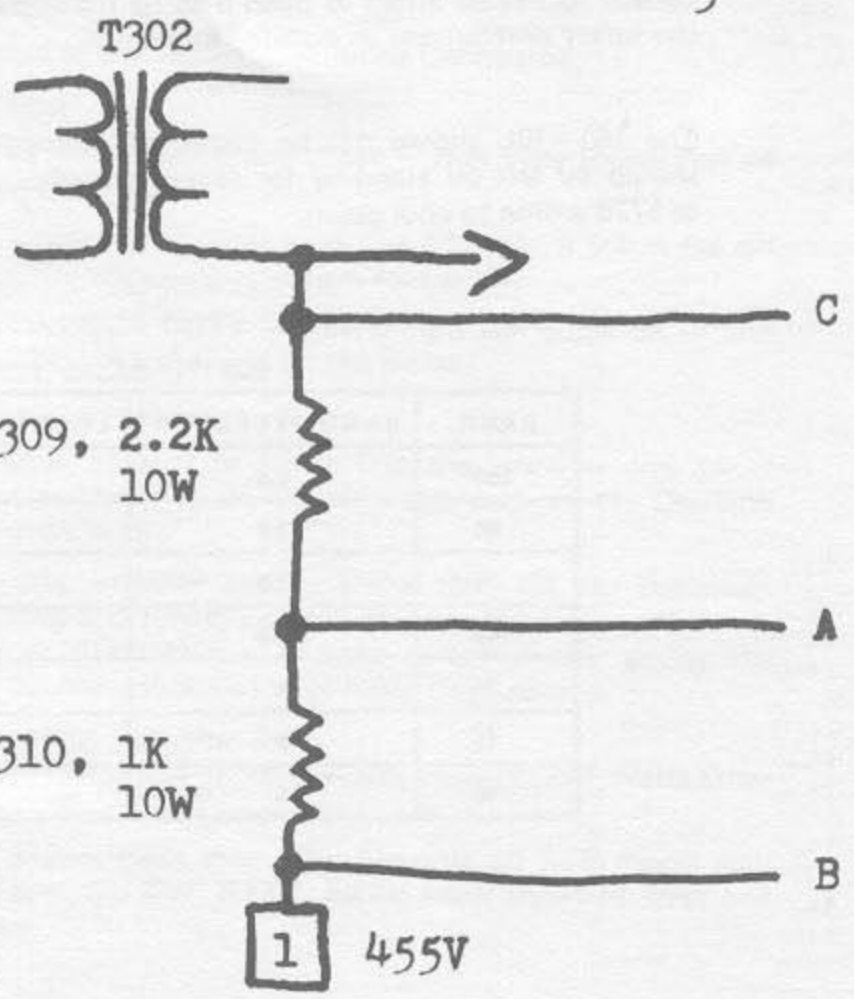
Pos. 1 - Normal R.F. output

2.- 8W, 'deadkey'

3 - 16W, 'deadkey'

4 - 30W, 'deadkey'

5 & 6 - same as pos 1.



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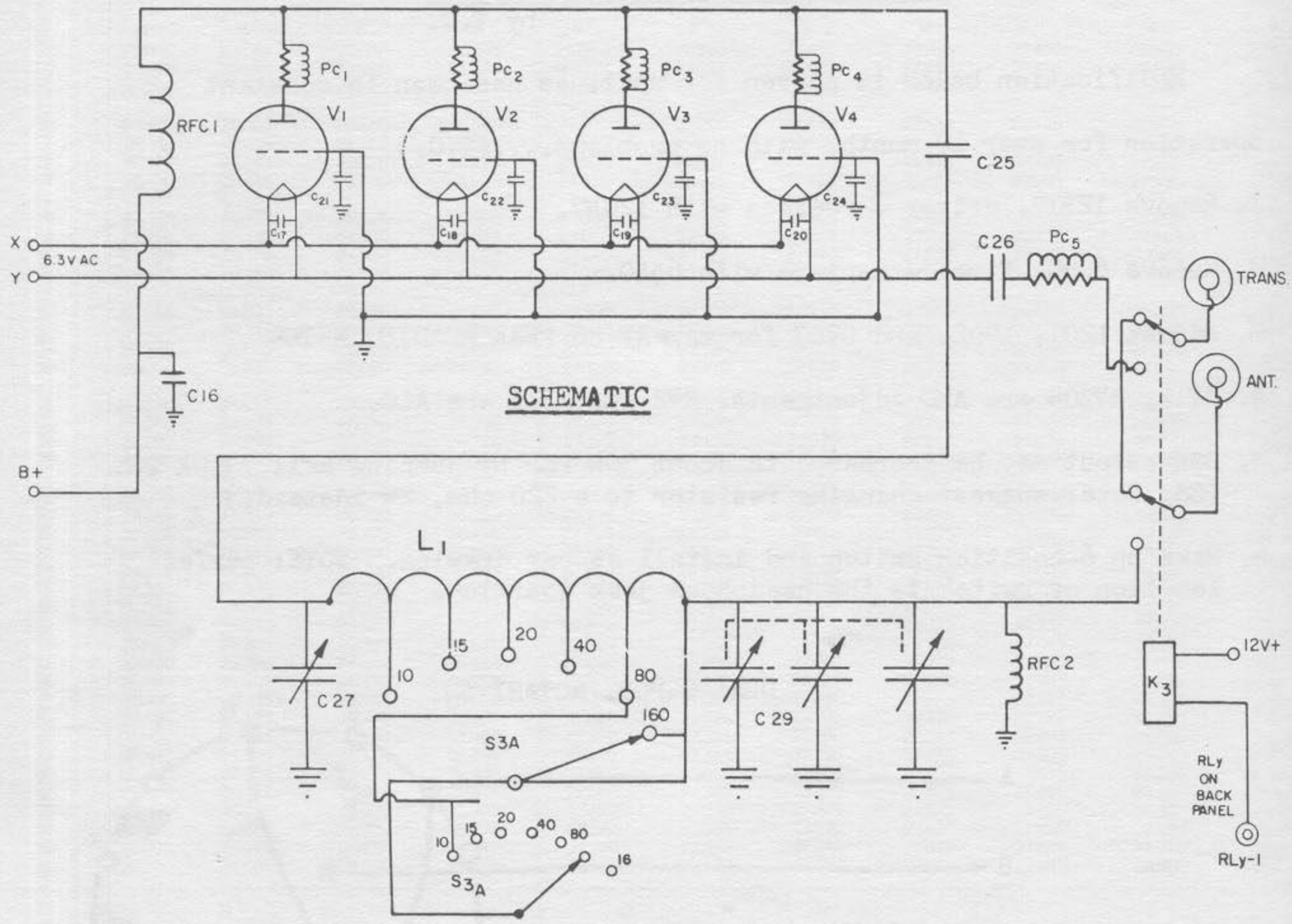
DENTRON 160-10L Amplifier



SCHEMATIC

"WARNING"
NEVER OPERATE 160 - 10L OUTSIDE OF ITS CABINET

The 160 - 10L Amplifier was designed and engineered to provide long and hard hours of service. Don't be afraid to push it to its full capabilities. Just use common sense and observe the safety precautions as outlined in manual.

NOTE

The 160 - 10L should not be turned off immediately after long periods of transmitting, but should be left on stand-by for several minutes with zero plate amperes to allow the 811A's or 572B's time to cool down.

160 10L BASIC TUNE UP CHART

BAND	BAND SELECTOR	LOADING CONTROL	TUNING CONTROL
160	1.8	4	1.8
80	3.5	2	3.5 (No. 2)
75	3.5	3	3.5 (No. 4)
40	7.0	3½	7.0
20	14	5	14
15	21	7	21-28
10	28	8	28

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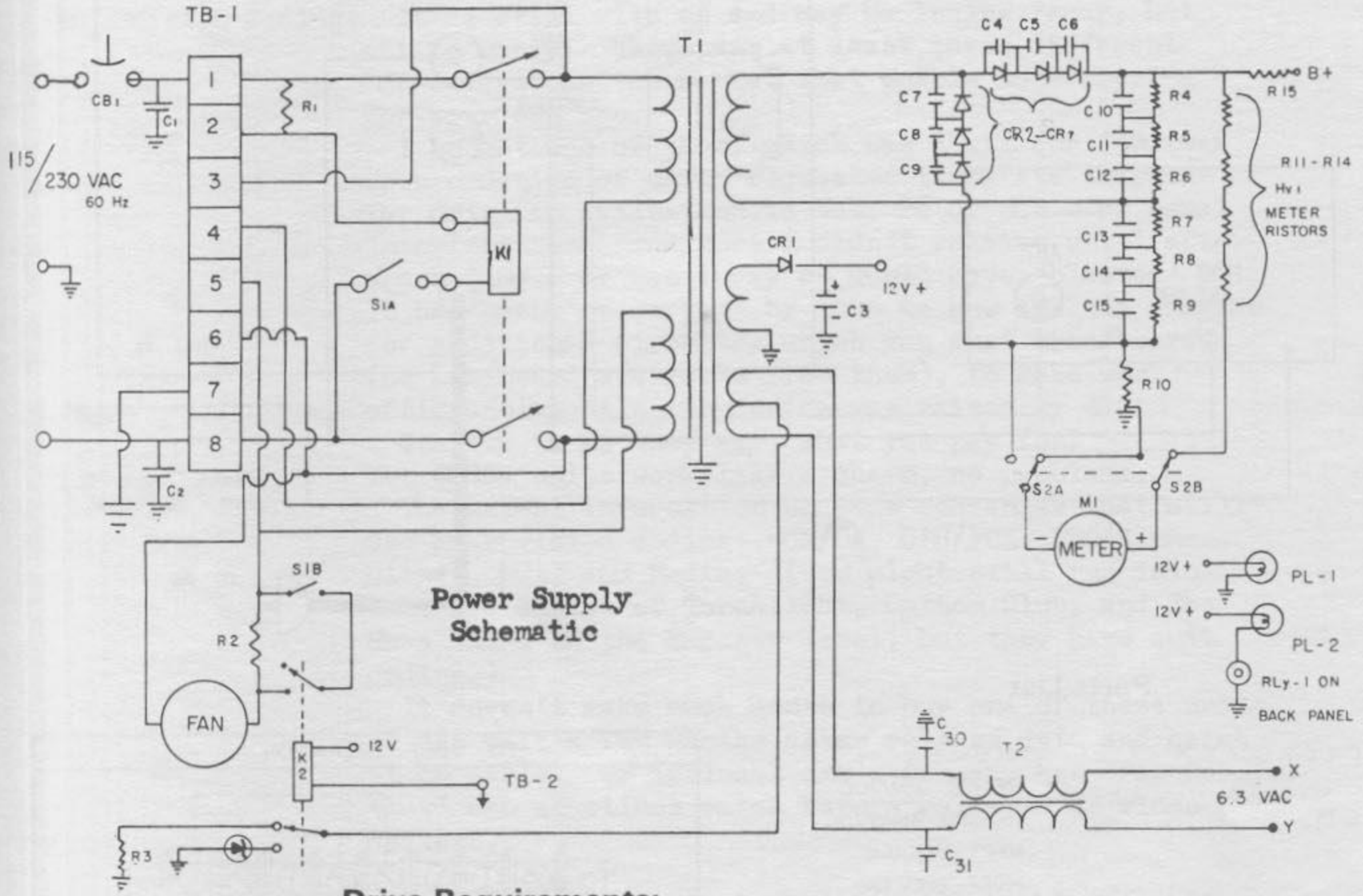

Power Supply Schematic

Drive Requirements:

To operate the 160 - 10L the exciter drive power can be as little as a few watts to 125 watts, the 160 - 10L with 572B tubes can be driven with as much as 150 watts —

Caution

This amount of drive will run the amplifier above the legal limit of 2000 watts input.

Operation

1. Make sure 160 - 10L is in the off position.
2. Connect the antenna or a dummy load to the 160 - 10L Antenna Connector.
3. Set the band selector to the proper band.
4. Preset loading and tuning controls as shown on control sheet — ***it is very important to have these controls preset before tune up.***
5. Tune and load the exciter into the antenna or dummy load, the amplifier is still in the off position. Tune to approximately 70 - 100 wats output — turn exciter off.
6. Turn the 160 - 10L switch to CONTINUOUS DUTY — power light will come on — and check in DC volt position for 1700 -2000 volts showing on the meter.
7. Switch the meter switch DC AMPS-should read zero.
8. Turn on the exciter and insert a small amount of power into the amplifier and adjust tuning control for maximum output as indicated on a watt meter such as the DenTron W-2 or SWR Bridge in the antenna coax lead.
9. Insert full power (70 - 100 watts) into amplifier and tune the 160 - 10L for maximum output alternately adjusting the loading and tuning controls for maximum forward power as indicated on station wattmeter or SWR Bridge. In case of low exciter power the loading control setting may deviate counter-clockwise from basic chart setting.
10. To Calculate Power = Voltage × Current + Exciter Drive
    example on 160 - 10L: 1800 Volts × 1000 MA = 1800 Watts input + 125 Watts Drive = 1925 DC input
11. The 160 - 10L is capable of much greater input than 1KW but only on SSB model with switch in the Continuous Duty position. ***On CW, RTTY, SSTV keep input at 1KW*** and operate in the continuous duty model
12. Normal SSB operation:
    a) Switch in SSB
    b) Voice peaks should read about .4 on DC amp scale — with speech processing much greater readings will show
    c) Idle current will be approximately 40 - 60 MA.

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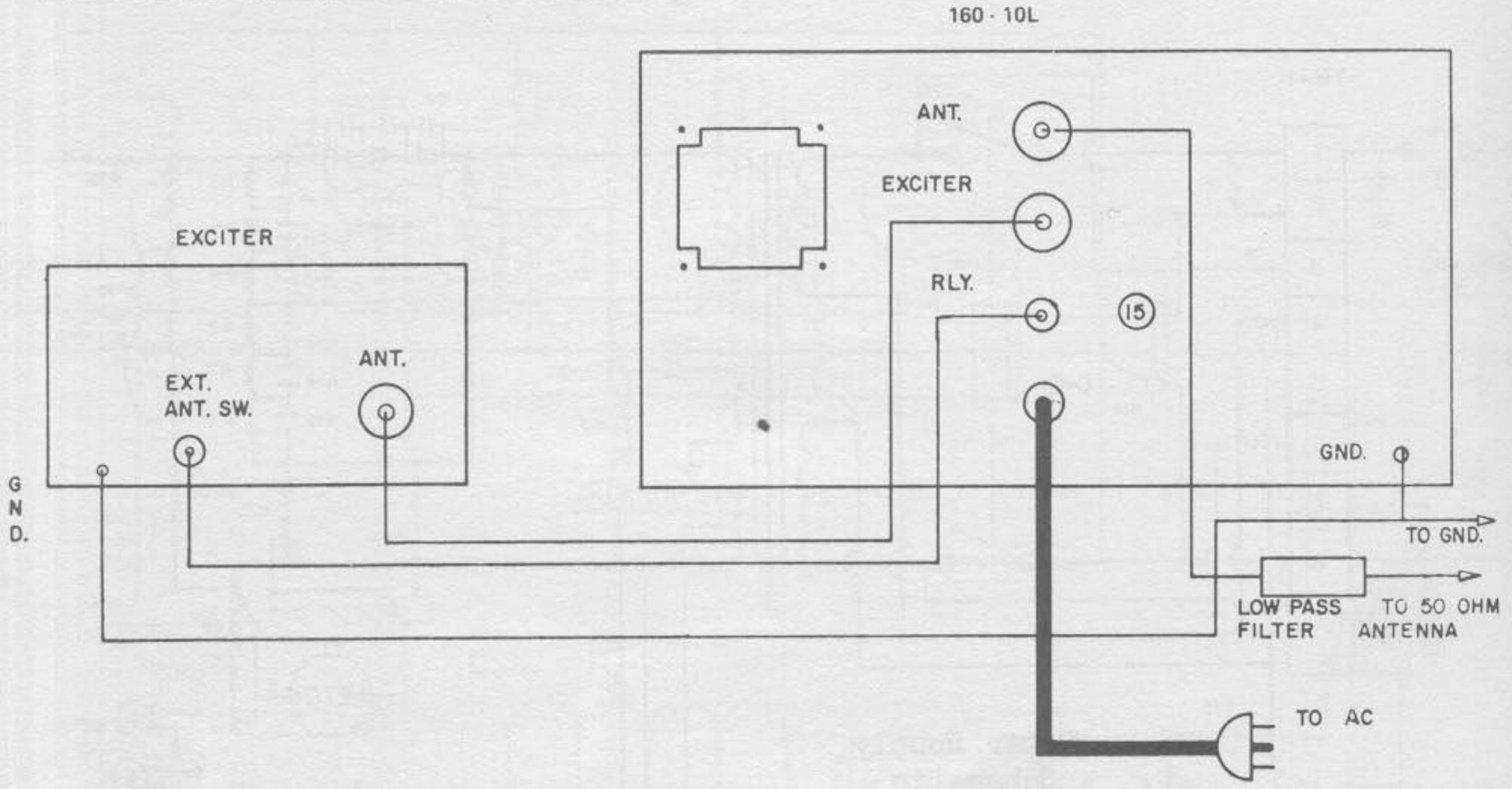
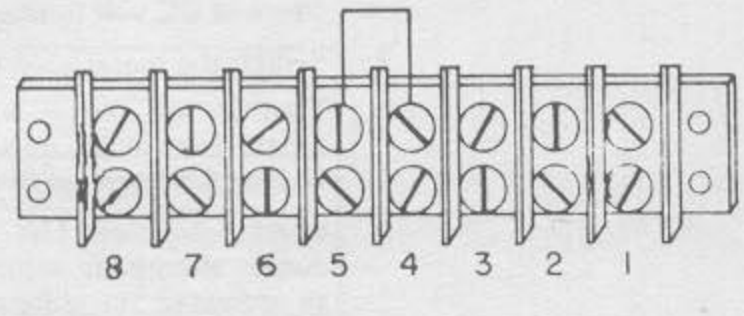
DENTRON 160-10L Amplifier, cont.



Parts List

C-1, C-2, C-4, C-9, C-17, C-26	.01 Disc 1KV
C-3	800MFD - 25WVDC
C-10 thru C-15	150MFD - 450WVDC
C-16	500PF - 6KV Disc
C-25	500PF - 20KV Cap
C-27	D-232 Plate Cap
C-29	D-1500L Load Cap
CB-1	15 amp breaker
CR-1, CR7	1N4007 Diodes
K 1	115VAC DPDT Relay
K 2 - K 3	12 VDC DPDT Relay
L 1	Plate Tank Coil
M 1	0-2000VDC and 0-1 amp meter
PC 1 - PC 4	Parasitic Chokes
PL 1 & PL 2	#330 and #328 Bulbs
R 1	1000 ohm 10 watt wire wound
R 2	2000 ohm 5 watt wire wound
R 3	50K ohm 10 watt wire wound
R 4 - R 9	25K 10 watt wire wound
R 11 - R 14	Meter resistors selected at factory
R 15	1 ohm 1 watt Carbon
RFC - 1	Plate Choke
RFC - 2	2.5mh 300 ma Choke
RLY - 1	R.C.A. phono receptacle
S 1	DP-3T Rotory Switch
S 2	DPDT Rotory Switch
S 3	2P6T Rotory Switch
T 1	Power Transformer
T 2	Filament Choke
V 1 thru V 4	811A Tubes or 572B Tubes
Z - 1	50W, 9V Zener Diode

120 VOLT OPERATION



JUMPER CONNECTIONS FOR 120 VOLT OPERATION
1 & 2 1 & 5 4 & 8

REAR OF CHASSIS

240 VOLT OPERATION

JUMPER CONNECTIONS FOR 240 VOLT OPERATION
remove 120 volt jumper connections and jumper 4 & 5

NOTE: THE AC CORD HAS 3 CONDUCTORS --- THE GREEN LEAD IS GROUND

NOTE: To locate terminal 1--8 find a 2000 ohm 5 watt resistor on terminal 1 & 2 and count toward front of amplifier.

NOTE: Replace 15 Amp circuit breaker with 10 Amp circuit breaker.

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Video De-Coding, $150 'Kiddee' Camcorder

Macrovision Coding: It is still with us and may be losing favor, but not to worry! There are at least three different "de-coders" on the market that enable home copying for your own use.

I bought one of them, which was a kit for $50. Upon ordering of unit, requested immediate shipment for doing an evaluation in Vol. 26 of SCB---as usual "manufacturer" made sure I didn't receive until after press time. He was lucky as would have 'blasted' it! It has been 're-worked' by them to now include diagram for additional circuitry which you must breadboard, (no kit/board available from them), to make work efficiently. Also the price was raised by $20!

Quality is as they say, what you pay for! The $200+ units work like a charm, no problems.

The latest information on tape companies that still use Macrovision coding: MGM/UA, CBS/FOX, HBO/Cannon, Disney, MCA, and Media. (You might still run into some old copies of Torchlight, Cotton Club, and The Sure Thing on the Embassy label, but they have quit coding.)

It doesn't make much sense to buy one of these units as can wait a few months after release date and catch it on cable. Or if local cable company has 'Pay Per View' can sometimes catch before released to video dealers.

On to a new item on the market and prediction that will be bigger seller than the 'Doll' craze was a few years back. (I want one of these myself).

Black and White Camcorder for $150 - - - Yep! On the way for fall and especially the Christmas buying season. (High demand, low production, so, expect a price raise to accommodate the public as usual.)

FACTS AS KNOWN TO DATE:
Manufacturer: Fisher-Price
Name: Pixelvision
Model: PXL 2000, "childrens camcorder"
Price: Suggested retail $150, ($200 with small screen B/W monitor).
Power: AC or 6-AA batteries
Picture: Black and White reproduction
Cassette: C-90 Audio Cassette; gives 11 minutes of video with sound.
Audio: Built in microphone, pre-set level.
Focus: Pre-set, 4 inches to infinity.
Lens: adjustable, indoor or outdoors.
Indicator: Low light and power, LED.
Playback: ..... Thru camcorder to receiver. Uses fixed head linear scan recording system. Solid-state CCD image sensor with 128 by 90 array of light sensitive element. The poor resolution from CCD is dealt with by shrinking on-screen picture. On playback only 3/4's of screen is filled, remainder has black border on all sides. Image becomes coarser as screen size increases. (On 25" set parts of the picture show up as visible squares). Best results with 13" or smaller set.

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"Quickie Fo Mods"

by J.C.

Wards Gen-775A (M58473P-PLL); EVEN Fo's: 26.610-26.950MHz, selector 9-40.
Pins 9 and 14 of PLL chip together using SPST.

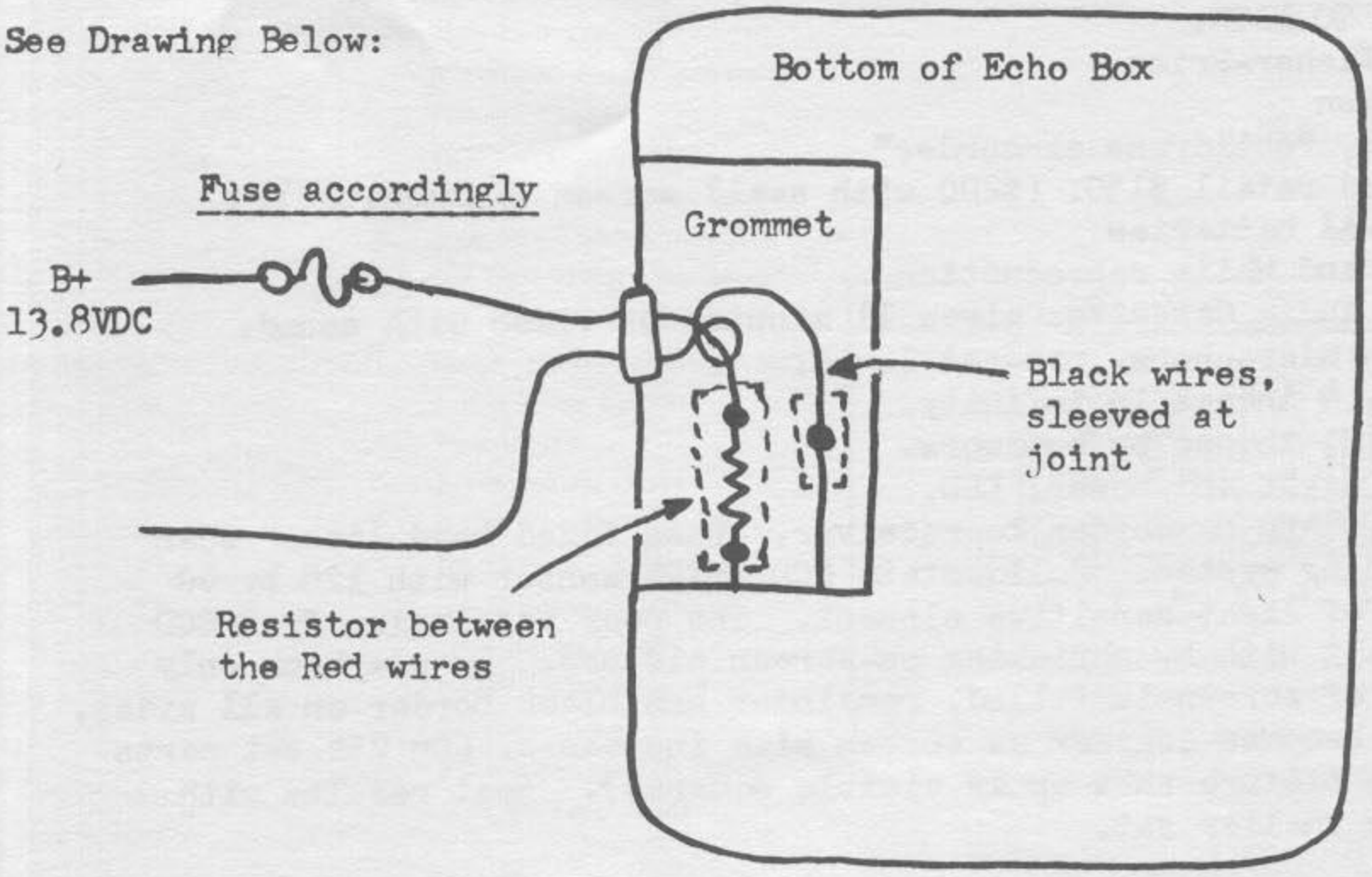
Regency CB-701 (302-861 PLL); 26.885-26.955MHz, selector 20-27.
Pins 12 and 18 of PLL chip together using SPST.

D&J Echo Box - Battery Eliminator Mod.

by J.V.

1. As close to battery clip as possible cut/strip/tin the Red and Black wires.
2. Drill small hole in side of case going into battery compartment.
3. Install rubber grommet in hole.
4. Route new Red and Black wires into battery compartment, tie a knot to prevent pulling out.
5. Solder 420 ohm 1W resistor to end of Red wire cut from battery clip.
6. Solder other end of resistor to new Red wire. (NOTE: make sure this entire joint is sleeved).
7. Solder new Black wire to existing Black wire, making sure joint is sleeved.
8. Black wire goes to D.C. Ground.
9. Red wire to B+; BUT - First put an ammeter in series; max echo/gain on box; check current and fuse accordingly!

See Drawing Below:



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C O N T R I B U T O R - F O R M

PLEASE COPY AND USE THIS FORM

P R I N T

DATE: _____

Contributor: _____

Address: _____

_____

CHECK ONE

Yes Print Name in Secret CB

Don't Print Name in Secret CB

Phone Number/Time convenient to call if necessary: _____

All above will be CONFIDENTIAL, Selman Ent. doesn't give out mailing list!

Unit Name/Model/FCC ID #: _____

PLL: MODES OF TRANSMISSION: _____

Number of Channels: Frequency Range: _____

Owners Manual available: Sent In: (Will be returned) _____

ORIGINAL Schematic available: Sent In: (Will be returned) _____

Information/contribution Vol. _____ Secret CB.

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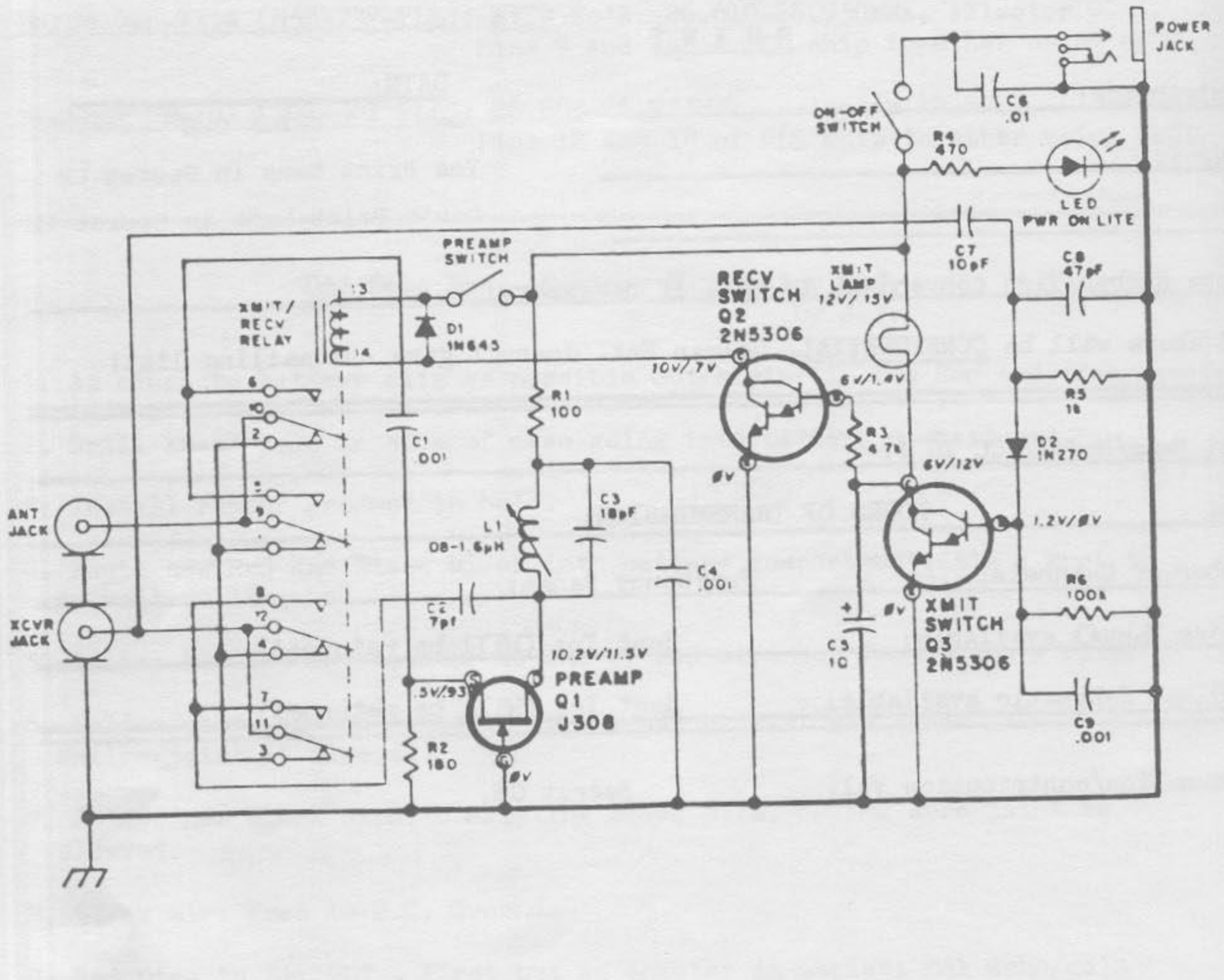
HYGAIN MDL. 422B Pre-Amp Schematic



Relay shown in transmit mode (relaxed).

Voltages shown: Xmit V/Rec V.

LOW FREQ. MOD.
by M.M.

LAKE 410, MM5108N-PLL: Open feed line to following pin for freq change.

26.325-26.685MHz, selector 1-32; open Pin 10.

26.695-27.005MHz, selector 5-32; open Pin 11.

TALKBACK

Cobra 29GTL/LTD: Solder 42 ohm resistor from center contact of Ext.

Speaker Jack to PCB Ground.

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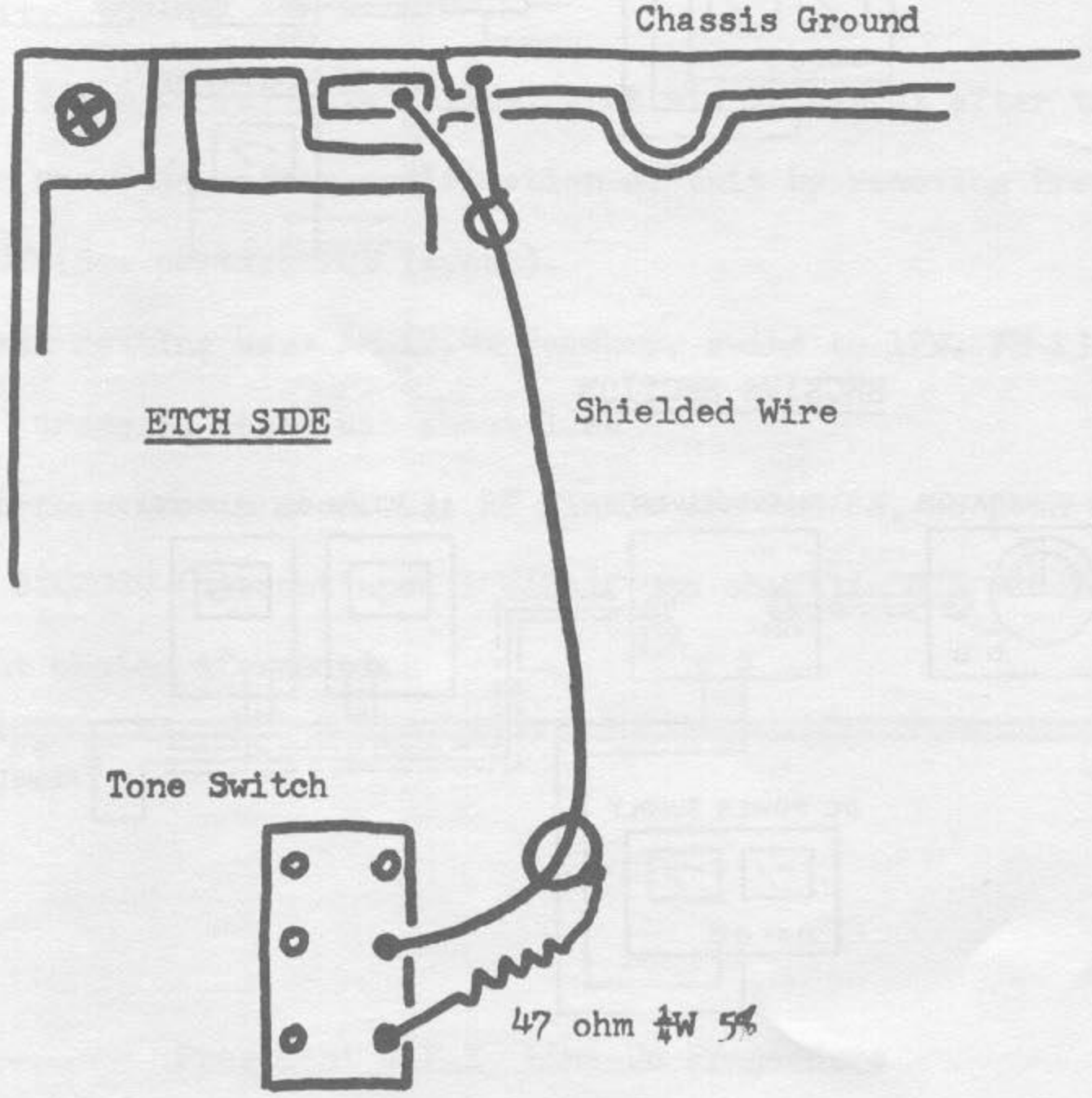
FORMAC 700, "TALKBACK MODIFICATION"

by R.M.

This modification was employed on S/N 500194 which had previous "Power/Echo" modification, (see Vol. 23, page 36).

For this reason the TONE switch was used for modification after 'hardwiring' for desired tone.



NOTE: Switch is viewed looking down on chassis from etch side.

Wired as such the 'Talkback' feature is ON, when switch is in up position (High).

ALERT: GALAXY 2100, PROBLEM

TRANSMIT COMES AND GOES..... CHECK FL-3, HAVE FOUND BAD IN UNITS. REPLACEMENT SHOULD CURE PROBLEM. (J.V.)

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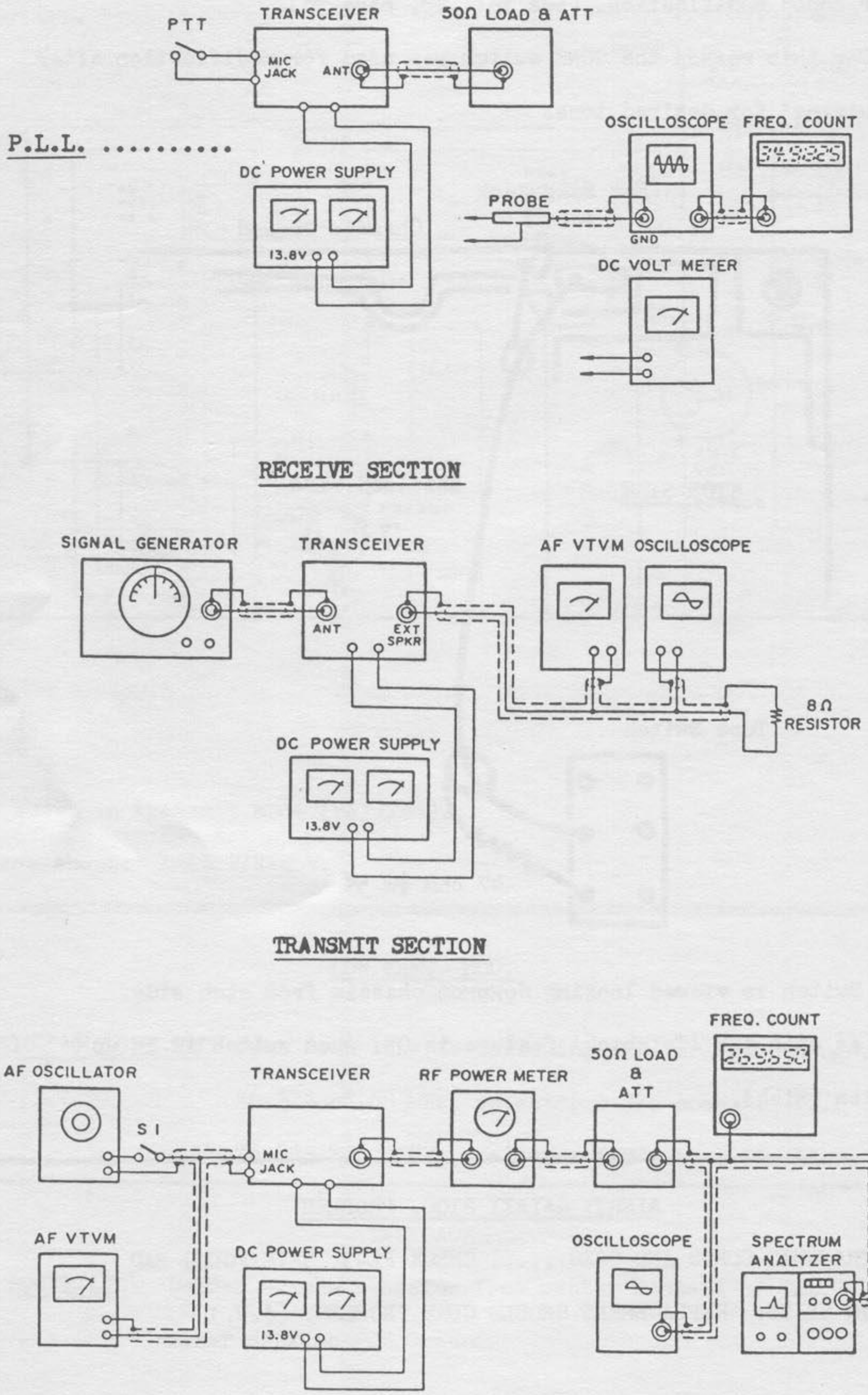
TYPICAL TEST EQUIPMENT SET-UPS



RECEIVE SECTION

TRANSMIT SECTION

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J.F.K. - EXPORT; 120 Ch. AM/FM mobile (uPD2816-PLL).

by Louis Fineberg

Finally, the schematic for J.F.K. has materialized... Believe it or not; ...entire FACTORY SERVICE MANUAL... No, a 'distributor' wasn't the source!

Unit has ± 40 channels, switchable beep, SWR meter, variable transmit power output control, and dual RF Finals. This is a true DELUXE unit....

TEST UNIT, S/N:63003727 gave following at mid Fo range; after tune-up. Modulation was 95%+, after modification of unit by removing Brown wire at main PCB (See partial PCB layout).

Power at max setting was: AM-12.4W deadkey, swing to 17W. FM-13.0W.

Variation across Fo range was about 1.2W

Overall performance is good..... RF Finals are 20W/6A, so push them.

Driver is 2SC2029 (discontinued 10W/2A), use chart in SCB #26 for a replacement choice if needed.

President J.F.K. Line-Up Proceedure

Following is PRESIDENT J.F.K. alignment, re-written for the experienced technician. Courtesy of "Custom Conversions".....

Equipment Suggested: Oscilloscope, D.C. Power Supply, D.C. Voltmeter, Frequency Counter, RF Signal Generator, Audio VTVM, Dummy Load, RF Power Meter, Deviation Meter.

PLL ALIGNMENT

1. Delta Tune to MID position. Adjust VC1 for a reading of 10.24MHz, ± 100Hz at base of TR18.

2. Band-MID, Mode-RX, Ch-1. Adjust L17 for 1.2V, ± 0.1VDC at TP1 (lead of R72).

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RECEIVE ALIGNMENT

1. Front controls to be left at following positions throughout RX alignment: RF Gain-MAX, S/RF-SWR-CAL at S/RF Position, NB/ANL-OFF.

2. Band-MID, Volume-MAX, Squelch-MIN, Ch-19, AM/FM to AM. Adjust L7, L6, L5, L4, and L1 for maximum output at Ext Spkr Jack.

3. Change: Band-LOW, Ch-1 and Band-HI, Ch-40. Adjust L2 and L3, in the following manner:
   Adjust L2 for maximum output of noise level in Ch-1, Low Band.
   Adjust L3 for maximum output of noise level in Ch-40, Band High.
   Readjust L2 by turning CW in Ch-1, Low Band, for the same noise level as obtained in adjusting L3.

4. All settings the same as Step 2-Change: Squelch-MAX. Adjust VR2 for 2V reading at Ext Spkr Jack, with Sig Gen input at $1000_{m}V$.

5. All settings the same as Step 2. Adjust VR1 for 'S-9' reading on meter with Sig Gen input at $100_{m}V$.

6. All settings the same as Step 2-Change: AM/FM to FM. Adjust L-801 for maximum with Sig Gen input at $1000_{m}V$.

TRANSMIT ALIGNMENT

1. Front controls to be left at following positions throughout TX alignment: Mic Gain-MAX, S/RF-SWR-CAL at S/RF Position.

2. Band-MID, NO MODULATION, Power-MAX, Ch-19, AM/FM-AM. Turn down the core of L18 before doing any alignment. Scope TP2 (R79), adjust L19, L20, and L18 for max reading in order.

3. Adjust L20, L15, and L14 for max RF output.

4. Change from Ch-1, Low Band; to Ch-40 High Band - adjust L11 for overall TX power balance.

5. All settings the same as Step 2. Adjust VR3 so needle of unit's TX meter points to desired zone.

6. Change to Low Power. Adjust VR501 for an output RF power level of between 1.5-4.0W over entire band, or as desired.

7. All settings the same as Step 2; change the following: AM/FM to FM, Ch-1. Adjust VR801 for 4KHz deviation.

8. All settings the same as Step 2. Readjust VC1 for 27.185MHz at TX jack.

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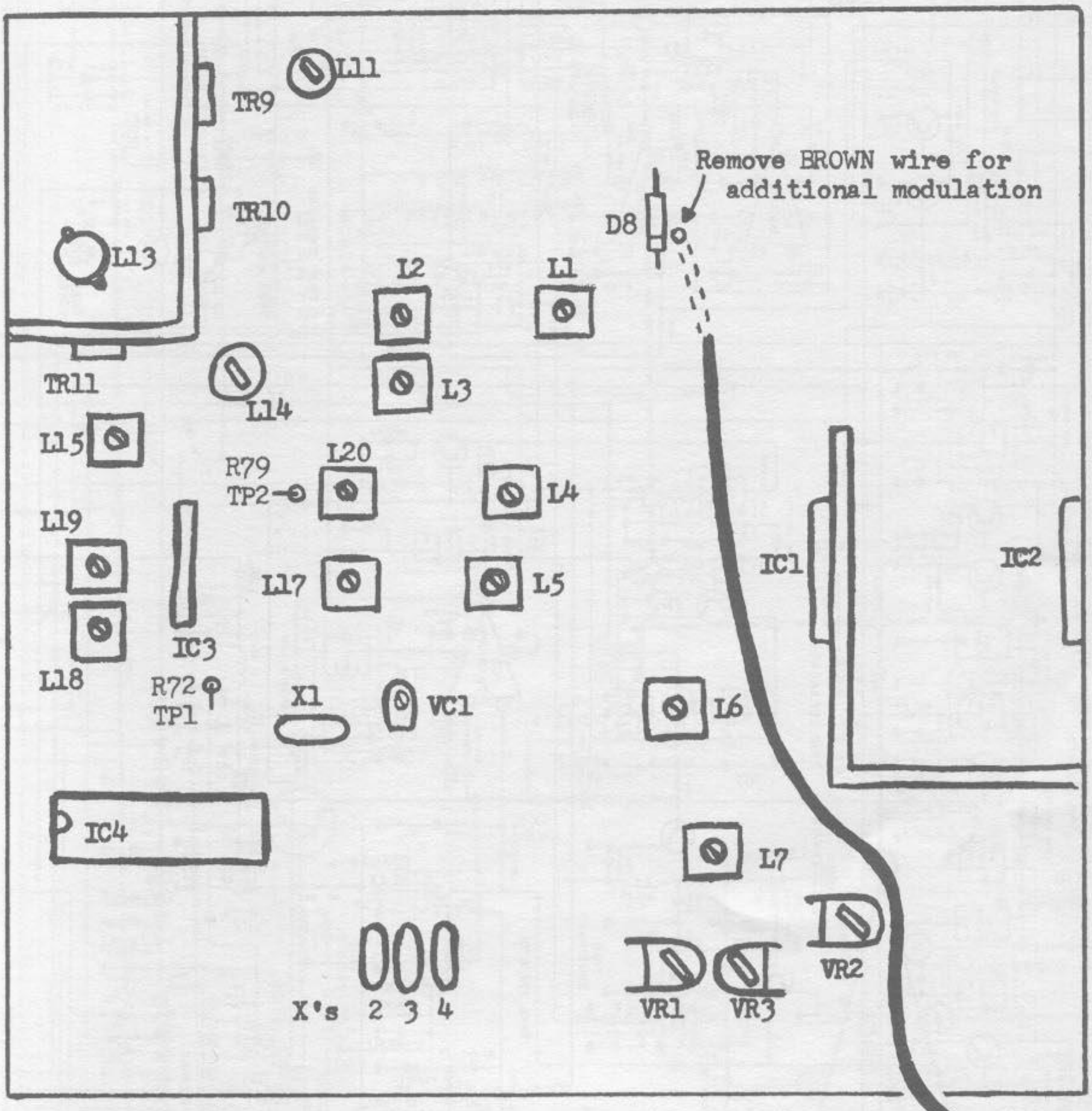
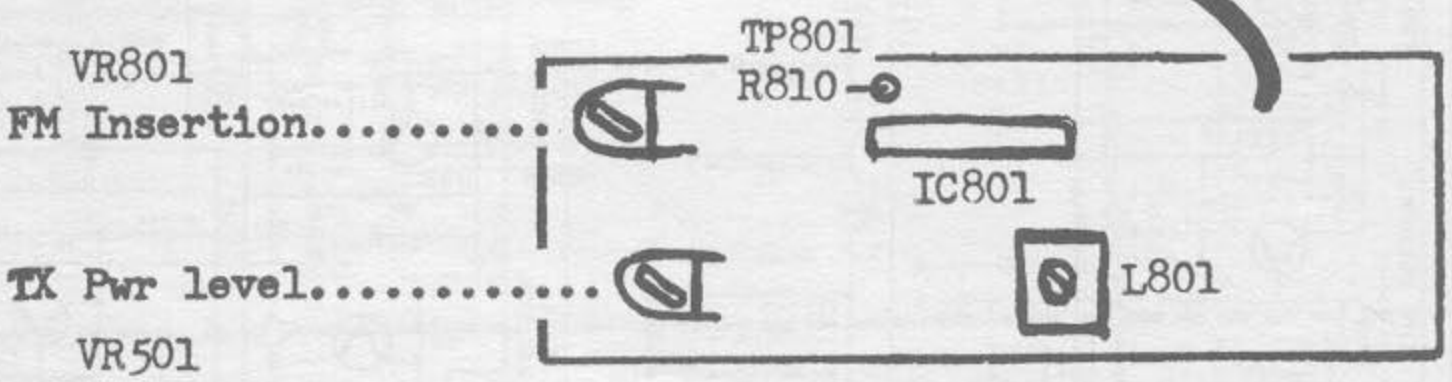
J.F.K. Partial PCB Layout

PC-713





PC-904

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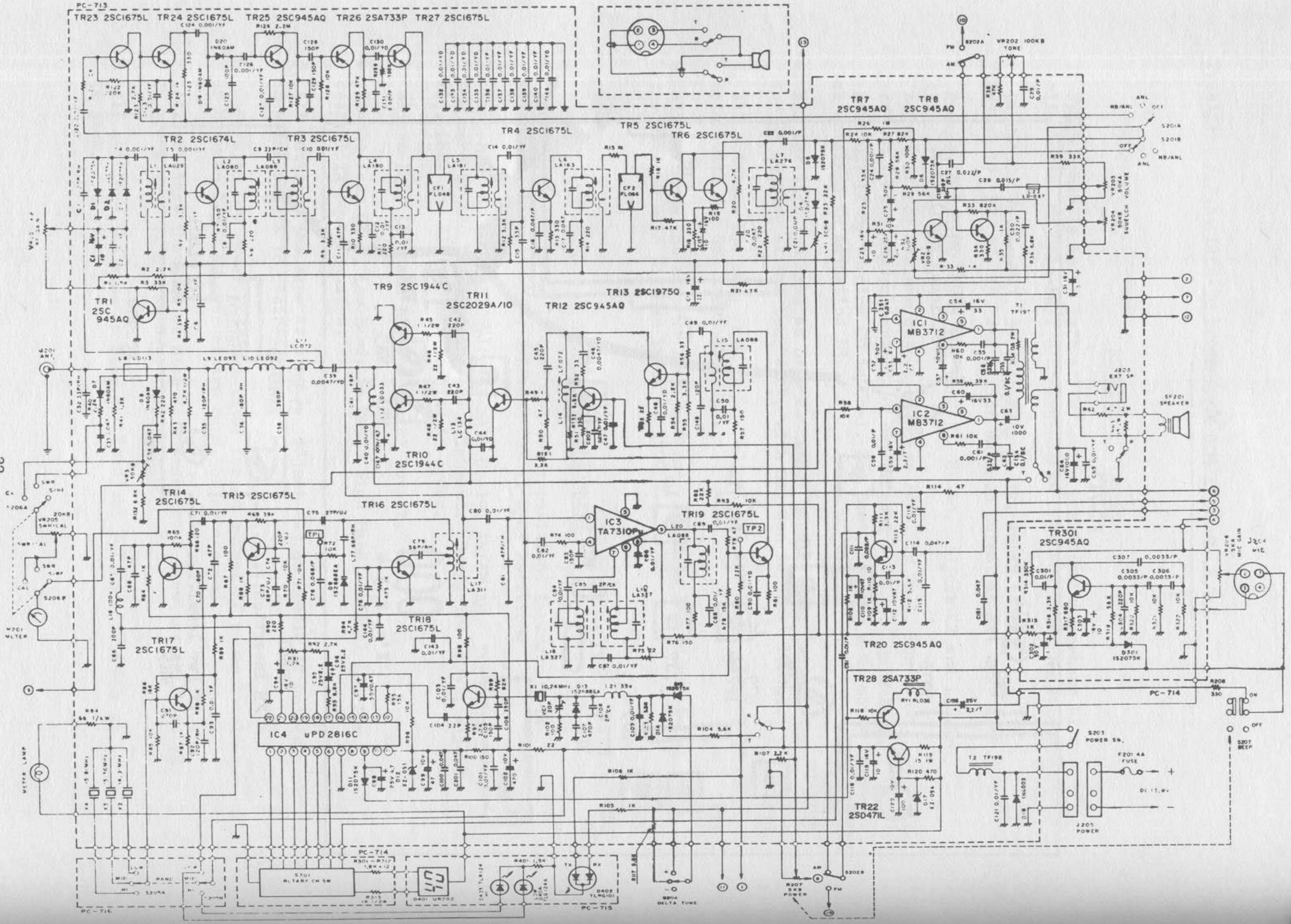
PRESIDENT J.F.K. - Schematic



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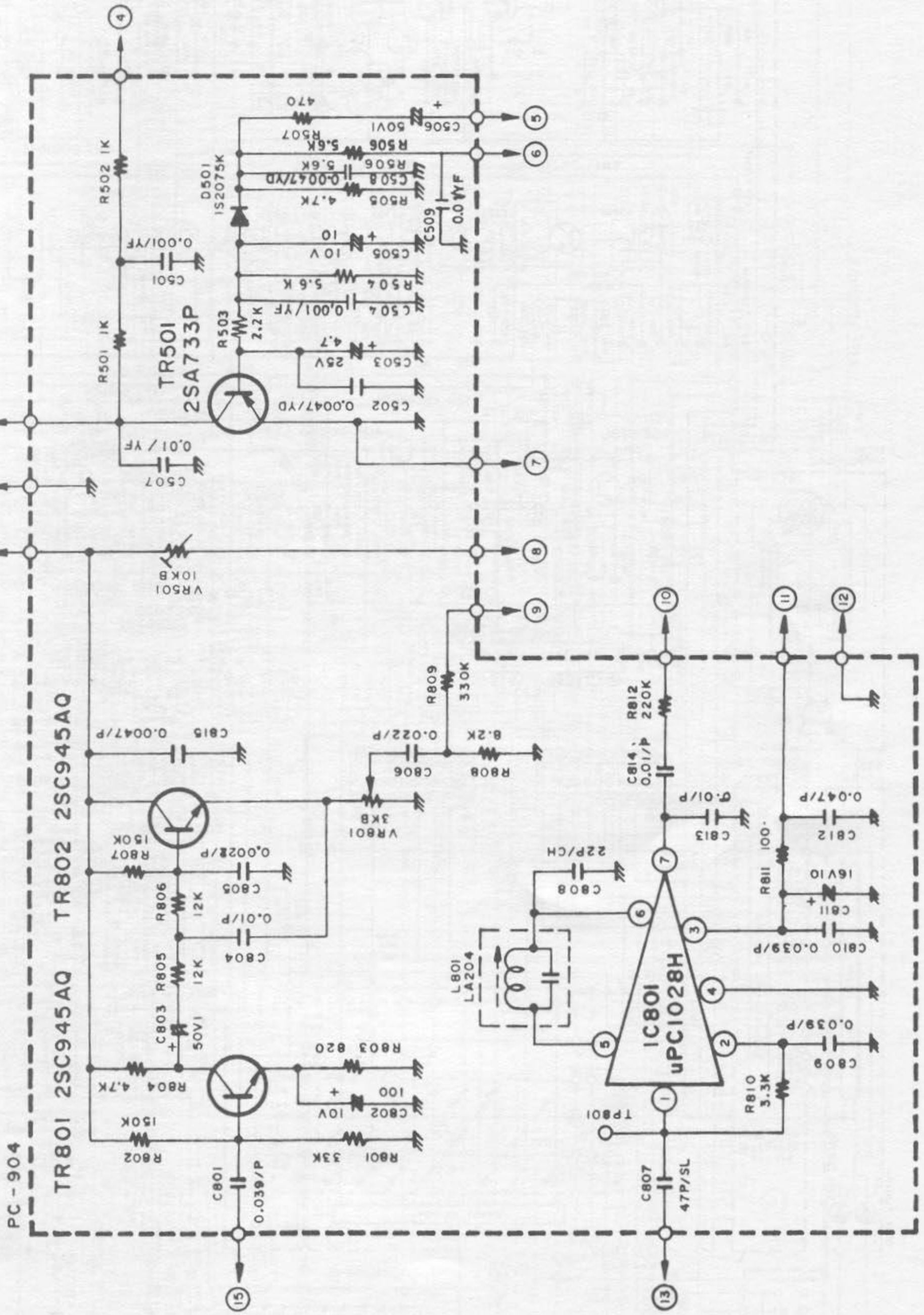

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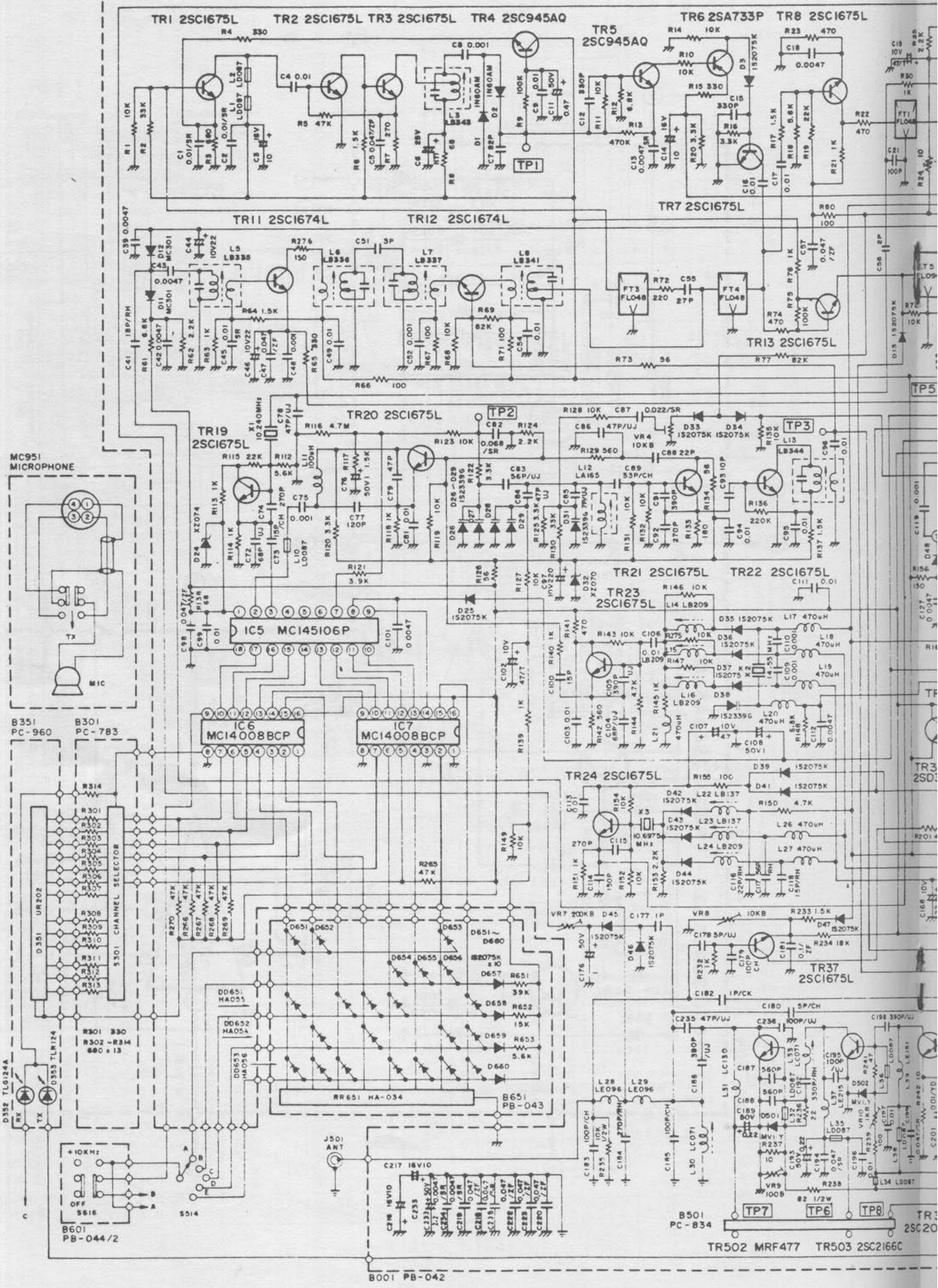

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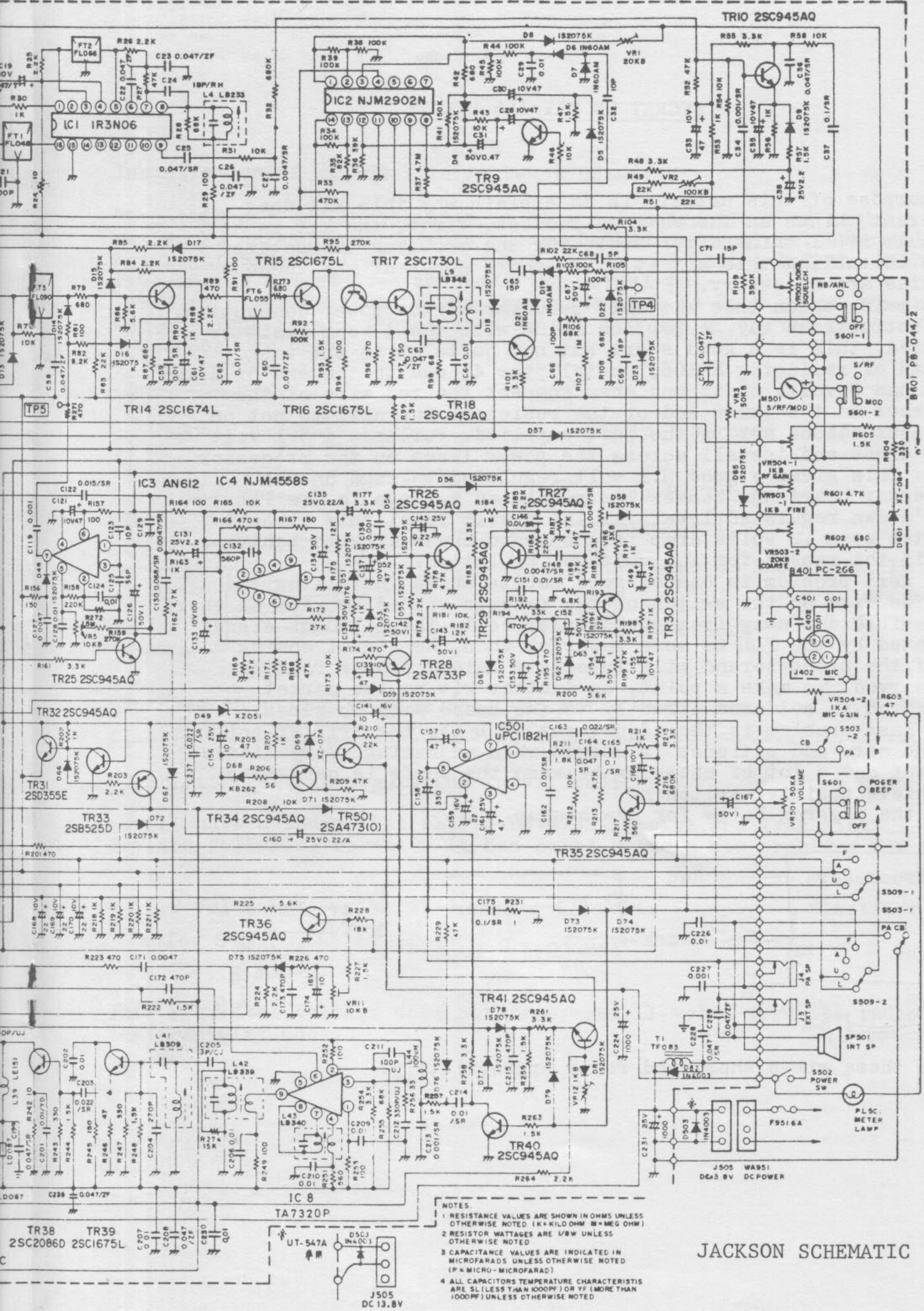

JACKSON SCHEMATIC

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SECRET CB KIT 146 UPDATE

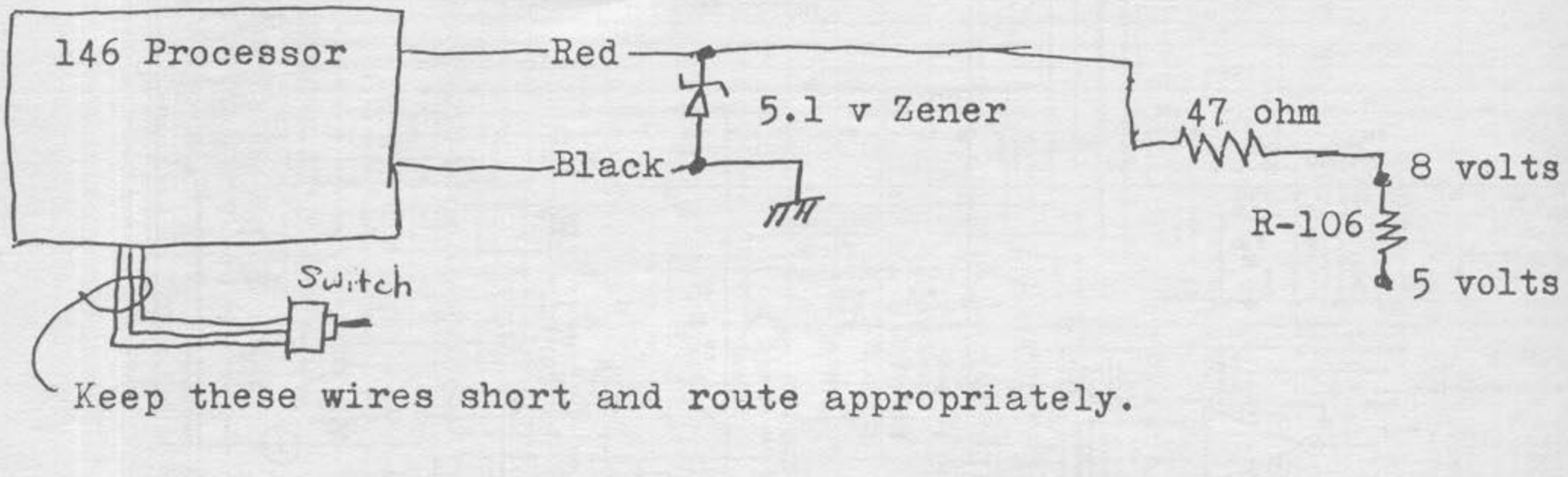
The purpose of this article is to explain why this kit does different things in the various radioes. First, the kit is not at fault !!! I think after reviewing the problems encountered while installing this kit it will become apparent why these remedies are necessary.

The main reason this kit acts peculiar is the power connection. The instructions say to replace R-106 with the 47 ohm resistor supplied, this is a good start but not quite up to the task. Instead of replacing R-106, install the 47 ohm to the end of R-106 which has 8 volts on it and then connect the red wire of the processor to the other end of the resistor. The next is not on the instructions nor is the part supplied. Purchase a 5.1 volt zener diode and install across the power leads on the processor board. This gives a good 5.1 volt regulated voltage on the proccessor board and leaves the regulated voltage to the PLL at it's own regulated level. At the 5 volt level this circuit operates even .2 volts drop is enough to cause erratic behavior, that is the reason for the voltage regulation.

The next problem is one of good habits while installing the kit. The wire on the switch of the process should be kept as short as possible and away from the tripler coil. The 5.120Mhz signal generated by the PLL is more powerful than the signal coming out of the processorand will interfere unless proper routing is observed. To make a point, on another kit on the market the switch is soldered directly to the board with no wires.

The last problem is the adjustment of L-13, the tripler coil. Extreme care and patience is needed when adjusting. Very little movement and a lot of checking between the bands is necessary to achieve positive switching.

See the diagram below for new hookup.



Keep these wires short and route appropriately.

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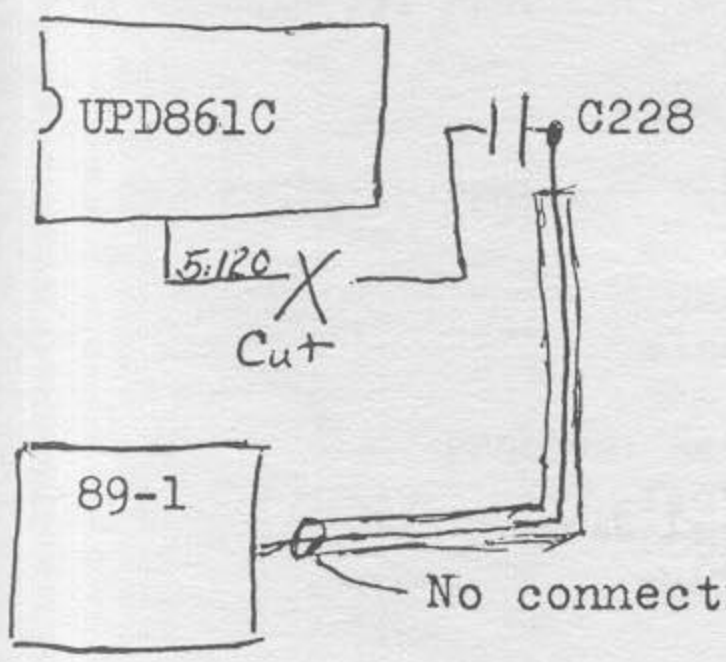
Installation of Kit 89-1 in JC Penny 981-6237

When this kit was installed according to instructions it would not work. Reread instructions and rechecked connections, everything was right but still no frequencies. After adjusting got the High frequencies but no Lows and lost the normal 40.

Had to experiment but found the right spot to hook in to. The kit may not lock-in all frequencies as the VCO has a limited range. See hook up below.



Q108

C248 - No need to change

Vco Buffer Coil

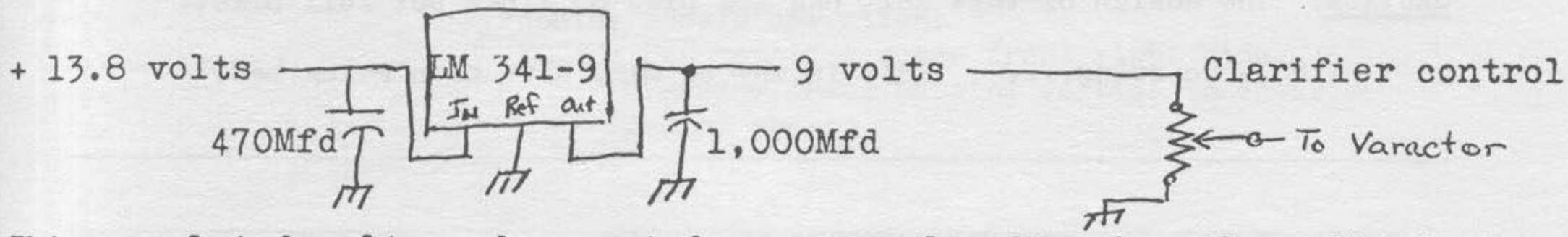
Tripler Coil

Note: Sams CB 228 has coils reversed

No need to adjust tripler coil, it works just fine.

Clarifier Voltage regulation in all radioes.

Still have a radio that shifts between receive and transmitt? Try the following circuit. It has cured quite a few problems for me.



This regulated voltage does not drop even .1 volts when the radio is in the transmitt mode.

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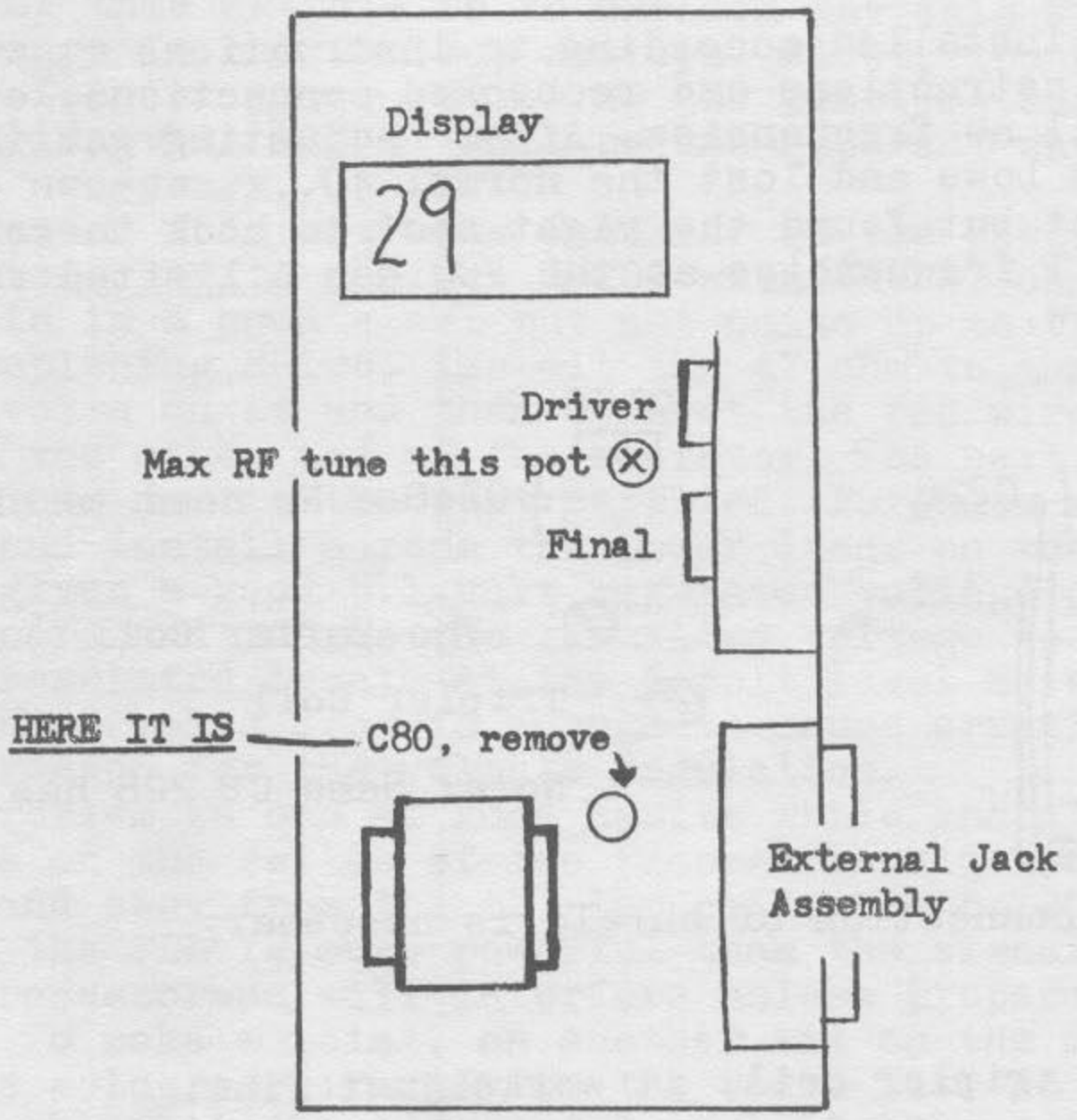
UPDATE: REALISTIC TRC-216

Where is the modulation limiter ? ? ? It must be pulled to make this unit do "it's thing".



UPDATE: ANTLAFIER Linear Amp.

CAUTION: The design of this unit has the bias on Final set full blast!

So - no swing.... This is why so many have been going bad.

UPDATE: MOSQUITO Linear Amp.

CAUTION: If the unit has blown RF Transistor, double-check the switch for high resistance. Many have gone bad and been the real reason for problem. Suggest removing CAREFULLY and hardwiring the unit permanently ON. (The reason for ON being underlined is that have received two units for repair that were wired OFF?) Fuse unit with a 3A fast blow.

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HINTS/KINKS/GOOFS/TECH TIPS

Information utilized in this column doesn't receive a free volume. But have reviewed all info and that used other places have entitled the contributors to a 'Free-bie'.....

Cobra 19XS.... Problem: No TX, receive OK. Final, Driver, Buffer-OK.
CHECK C250, found bad.
Problem: No RX, transmit OK. .....DOUBLE-CHECK ALL UNITS AS THIS IS OUT-OF-THE-BOX PROBLEM....
....VCO is out of Alignment...

Ham International UK 120FM.... Problem: Unit would not un-key!
Found L15 was out of alignment.
Only had 1W of carrier with problem.

Galaxy 2100... Problem: TX comes and goes. Check FL-3, these have been going bad.
Not enough modulation (?). Remove TR32.

Cobra 29GTL... Problem: Intermittent problems, these usually found on units 'bounced around' in the 18 wheelers.
CHECK: Cracks near IC3, IC2, IC1, and L21. also in the area of audio transformer. Etch The etch is taking a beating!
Problem: Have also found L21 incorrectly installed at factory and not making full contact through PCB. DOUBLE-CHECK ALL UNITS AS THIS IS OUT-OF-THE-BOX PROBLEM...

Cobra 25LTD... Problem: Intermittent RX AUDIO.
CHECK for solder joint cracks on Ext Spkr Jack.

Excalibur SSB... Problem: RX and TX would separate as you turned pot to right side; same as to left; but not as bad.
Solution: performed mod in volume 22, page 38; but left original pot in place.
WORKS LIKE A CHAMP!

Super Galaxy/Galaxy II...Problem: Works on bench but not when hooked up running mobile operation.
FOUND: PCB mounting screw front right side breaking trace causing voltage to chassis ground short!

Sorting Out The "Goodie-Box"? If you need to do the job correctly, try your local TV repair shop ----- the small boxes that replacement transistors come in are perfect. Cross-reference your transistors/diodes/etc. to ECG and store accordingly... This way can strip all those junk units without having a mess to sort out and store.....

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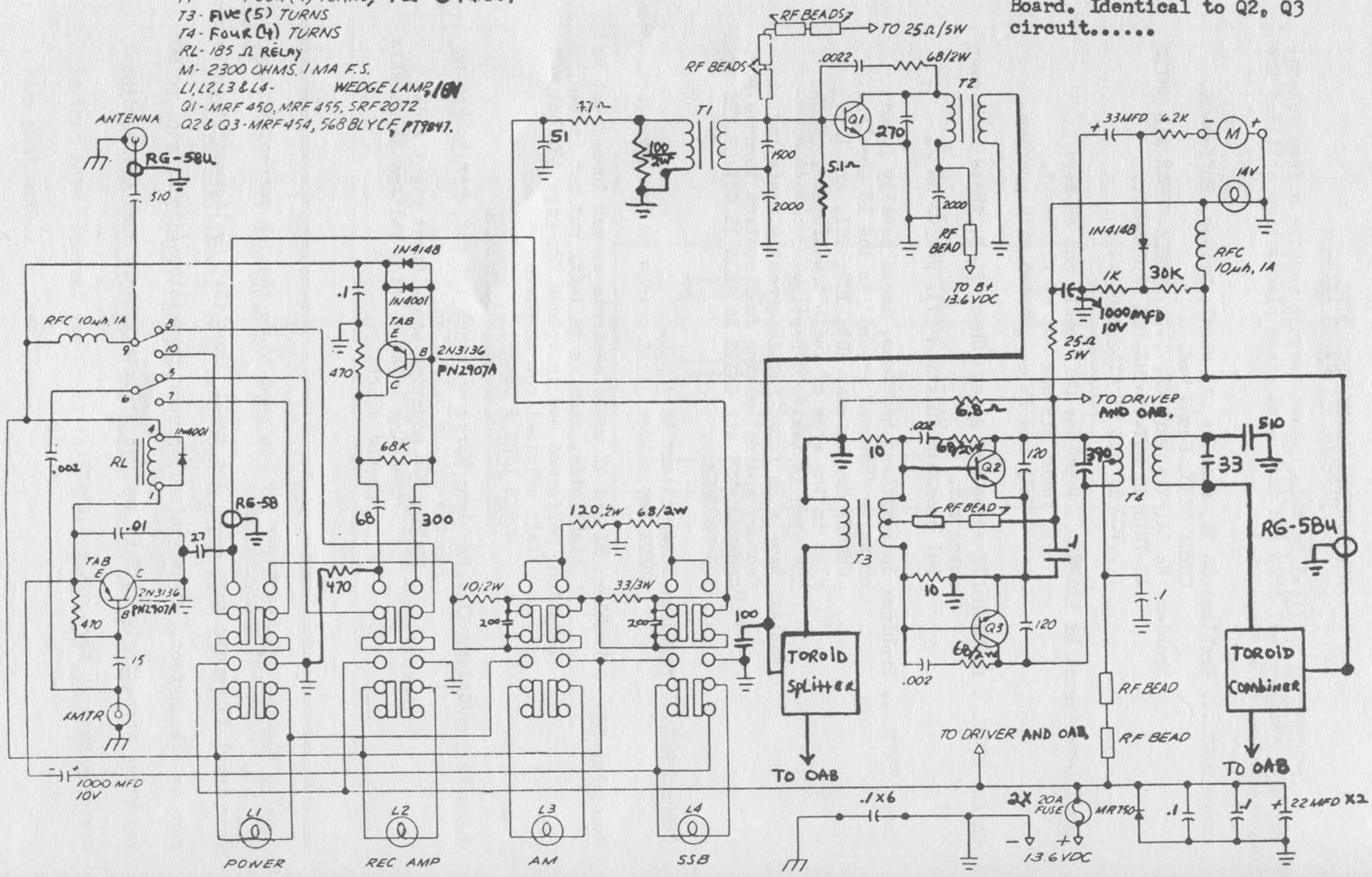
TEXAS STAR 250, LINEAR SCHEMATIC

T1 - FOUR (4) TURNS, T2 - 6 TURNS.
T3 - FIVE (5) TURNS
T4 - FOUR (4) TURNS
RL - 185 Ω RELAY
M - 2300 OHMS. 1 MA F.S.
L1, L2, L3 & L4 - WEDGE LAMP, 18V
Q1 - MRF 450, MRF 455, SRF 2072
Q2 & Q3 - MRF 454, 568 BLYCF, PT9847.

Note: OAB is Output Amplifier Board. Identical to Q2, Q3 circuit.....



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Use #10 wire or larger (#8, #6, etc.) to connect unit directly to battery. Keep these wires as short as possible. Any length of coax can be used between the radio and unit. Attach an antenna that will handle at least 500 watts.

AM POWER LEVELS: Can be changed by pressing the orange and yellow buttons during AM transmissions.

Examples: 1-For lowest power output, press both orange and yellow.
2-For second power level, press yellow only.
3-For third power level, press orange only.
4-For highest power level, leave both orange and yellow off.

Use these combinations during AM transmission only.

SSB TRANSMISSIONS: Press the yellow button only; this will activate the delay circuit so the relay will not chatter with your voice. Best SSB operation is obtained with only the yellow button depressed.

RECEIVE AMPLIFIER: Press the white button to turn on the receive amplifier. This will increase the receive range approximately 10dB. The receive amplifier operates independently of the power button. If you're using this on SSB signals, press the yellow button to keep the relay from chattering during your SSB transmissions.

METER: It lights only during amplified transmissions and is an RF relative output indicator with a reading of 5 to 8 being normal during highest power output.

SPECIFIC TUNEUP

REALISTIC TRC-88 (21-1610); 1 Watt/3 Channel Walkie-Talkie.

This is a CHEAP, STRIPPED DESIGN, NO-FRILLS unit! "Tune-up", Tune-up; RX: L9, T1, T2, T3, T4, and T5. Try increasing value of C21 (3.3/50), for ANL improvement. TX: T7, L7, L8, L4, and L2. "Tune TX using field strength meter". R50 may be changed to lower value for increased RF output.

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CRC 100; Installation on Excalibur SSB

by L.S.

SPECIAL NOTE: When purchasing CRC 100 for the Excalibur - SPECIFY as such!

"A specific CRC 100 is made for the Excalibur with an isolated case. The factory does make them.... NO PRICE INCREASE!"

1. See Figure 1, locate J58 on left side of radio.

2. What we have found easiest to do was to put a test point here (left hand side). Drilled a small hole for a solid/stiff/insulated piece of wire. Inserted thru hole, soldered on bottom to J58. New TP3....

3. Run the four (4) wires from the CRC 100 through a hole in the back of radio.

4. Hook-up the Red wire to a switched 13.8VDC. Put the Black wire on a good CHASSIS ground.

5. The shielded cable goes over to where new test point installed. Hook center to test point, shield is grounded to case of L44.

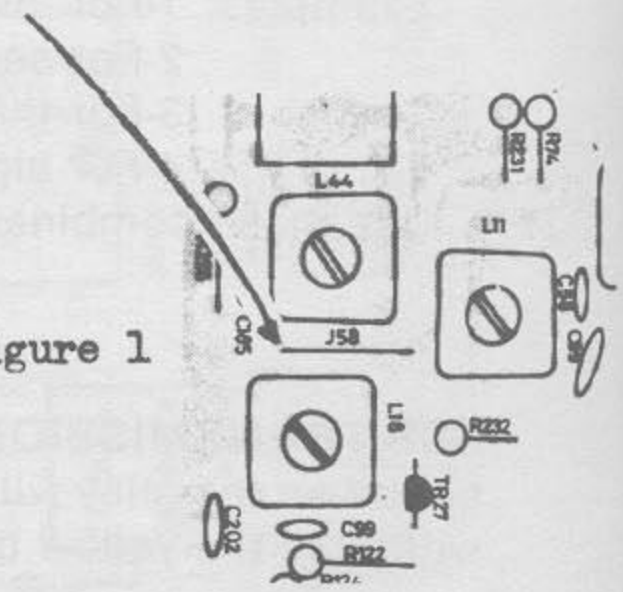

Figure 1

* If the meter oscillates on high power, or "flickers" when you talk.

The transmitter stage must be re-adjusted. L-42 is the coil to adjust to stop this.

Excalibur SSB (NEW) ... Errors - Factory Manual

by L.S.

Page 8, Section 3, Part E. (Off-Set Frequency)

4) 16.040MHz should be 16.490MHz.

16.0425MHz should be 16.4925MHz.

16.0375MHz should be 16.4875MHz.

Page 10, Section 5, Part G.

2) 26.945MHz should be 26.495MHz

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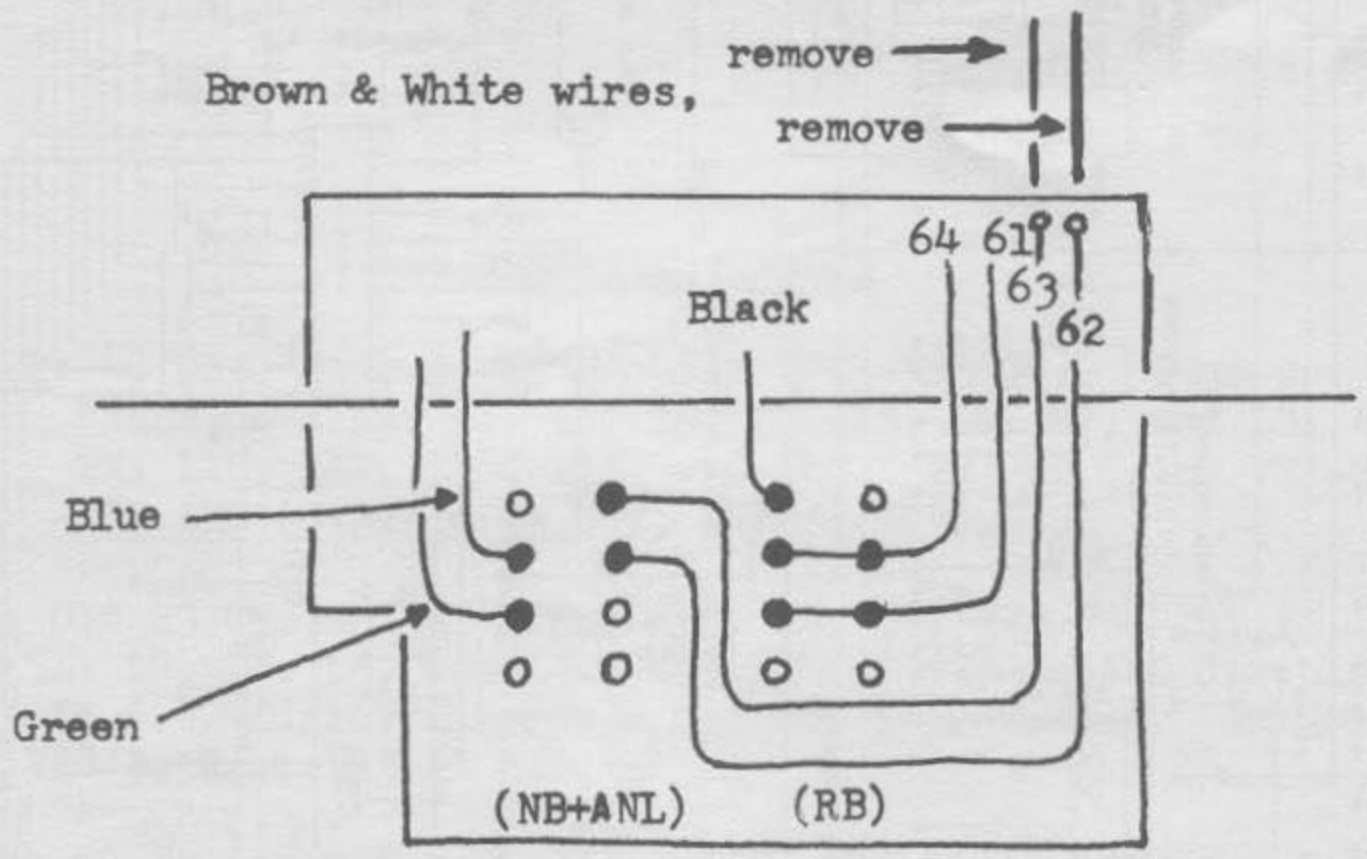
"NEW" - Excalibur SSB (Export); 10KHz Jump Mod.

by L.S.

The "new" Excalibur SSB now has a Roger Beep switch and the ANL/NB incorporated on single switch. (Refer to Vol. 22, page 37 for "old Ex-SSB function selector PCB.)

Conversion of NB/ANL switch to 10KHz Jump switch: USE DRAWING BELOW FOR GUIDE

1. Follow the Blue and Green wires from the NB+ANL switch down to the MAIN PCB. (Note: Blue goes to trace #61, Green to trace #64; ON MAIN PCB.)
2. Unsolder wires at main PCB; install jumper between traces #61 and #64.
3. Locate J49; remove and install a 4.3K ¼W resistor. (Special Note: some have found it easier to cut jumper on top of PCB and solder to wires.)
4. Solder Blue wire removed from trace #61 directly to Pin 9 of IC-6; this is Logic 1.
5. Solder Green wire removed from trace #64 directly to Pin 16 of IC-6.
6. Locate traces #62 and #63 on the top of the Function Selector board. Remove the Brown and White wires, insulate separately-tie into bundle.
7. NB+ANL is now a +10KHz jump when it is ON.



"NEW EXCALIBUR", Function Selector PCB

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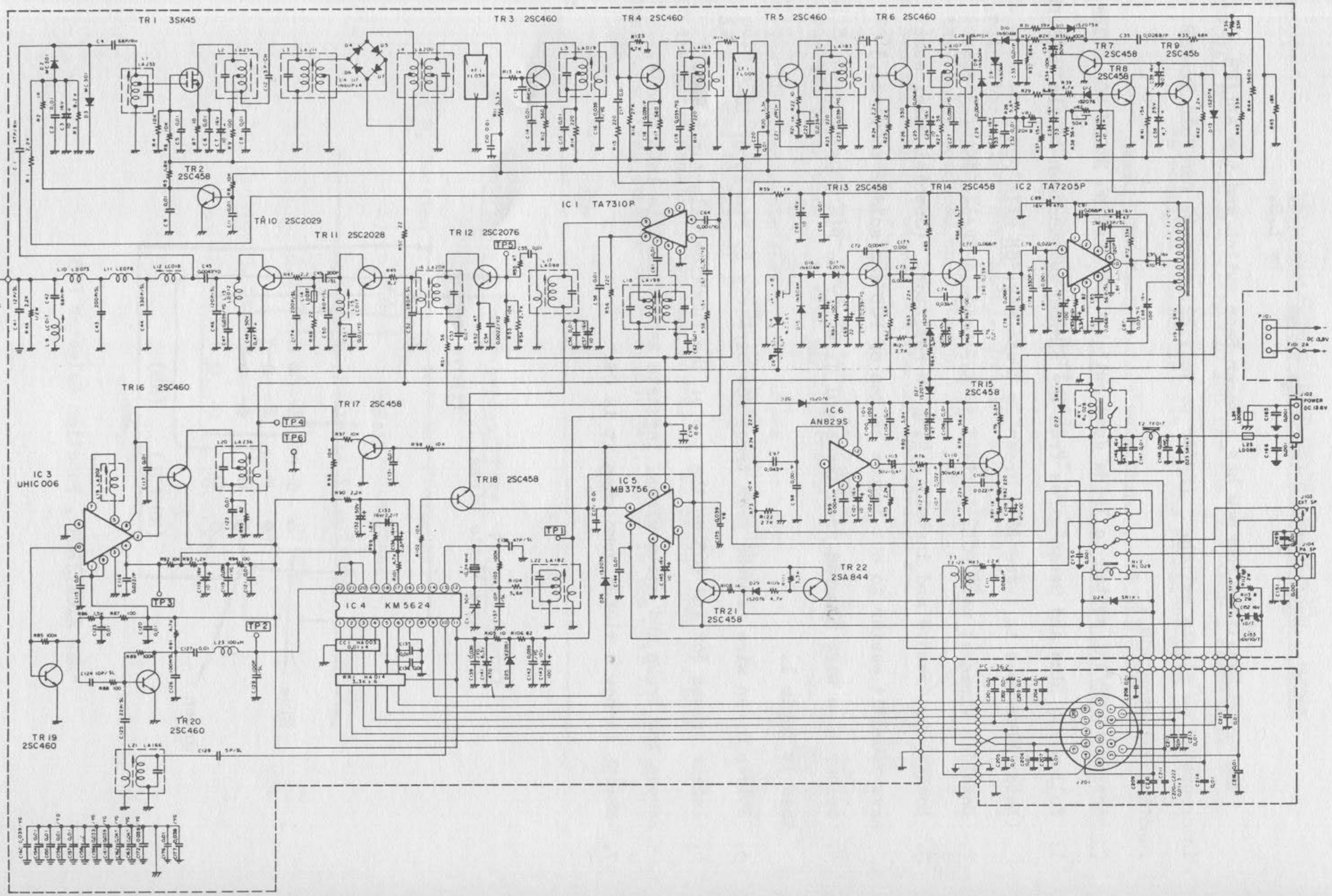
COBRA 62XLR Schematic



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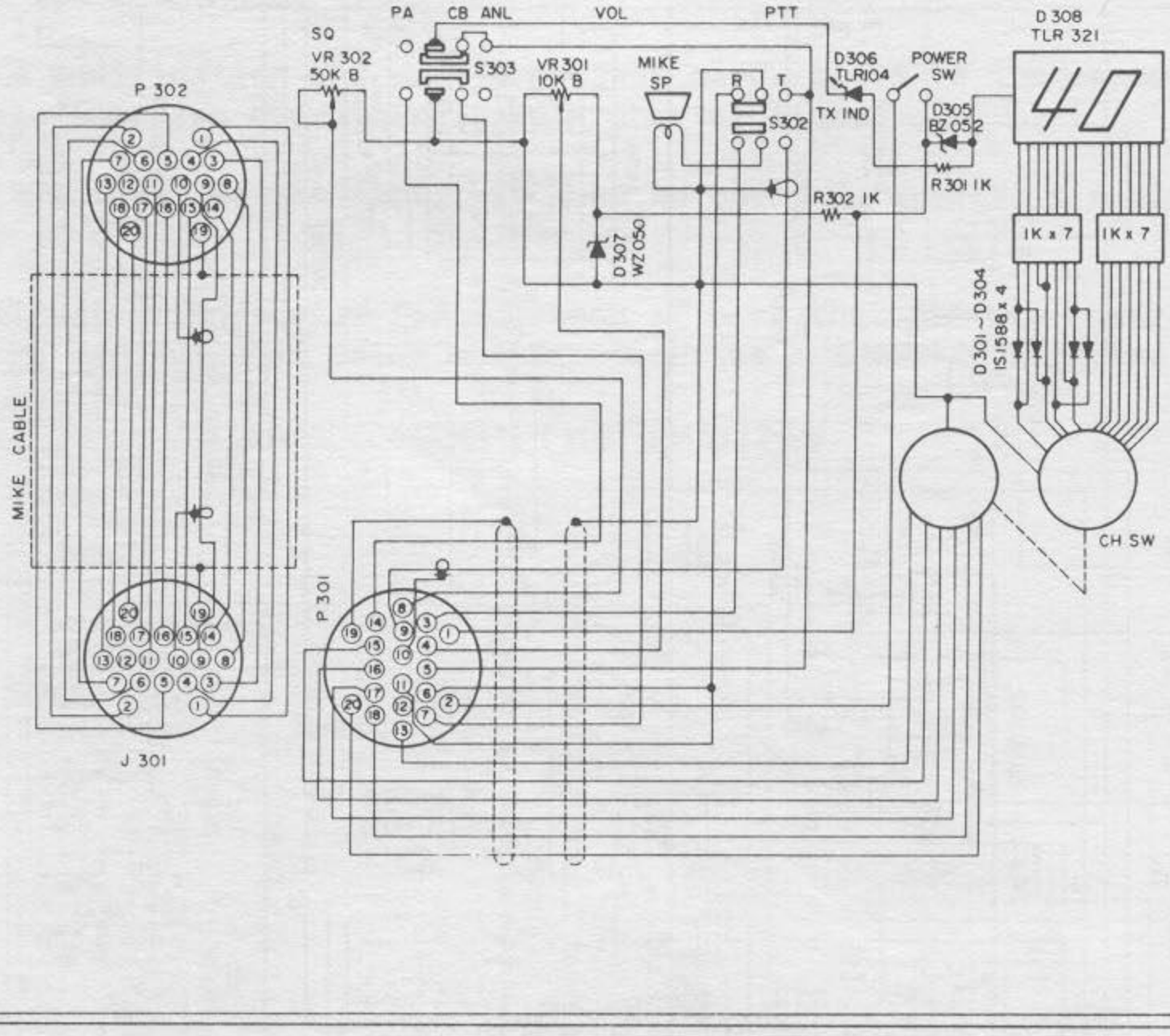
COBRA 62XLR Schematic, (Cont.)



SPECIFIC TUNEUPS

COBRA 62XLR; 40 Ch. "Hide-A-Way" mobile (PLL-KM5624). Tune-up; "Tune-up"; RX: L1, L2, L3, L4, L5, L6, L7, and L8. TX: L18, L17, L16, L15, and L12. VR1-RF Gain, VR2-Sq Rng, VR3-AMC (disable is C67, .47Mfd/50V).

COBRA 19M; Old 23 Ch. unit. "Tune-up"; RX: T1, T2, T3, T4, T5, and T6. TX: L9, L8, L5, and L3. C73 (1Mfd/50V) is AMC disable. C27 (.47Mfd/16V) increase for ANL improvement. VR1-AGC, VR4-Sq Rng, VR5-TX Mtr.

SBE LCMS-4; 40 Ch. AM/SSB mobile. (PLL is CCI-3001) "Tune-up"; RX: T1, T2, T3, and T4. TX: T8, T9, L12, L4, L3, and L2. VR2-RX Mtr, VR7-AMC, VR10-TX Mtr, VR11-ALC, VR14-Bias. "Special Note" Remove Q16, put a jumper from B-E holes.

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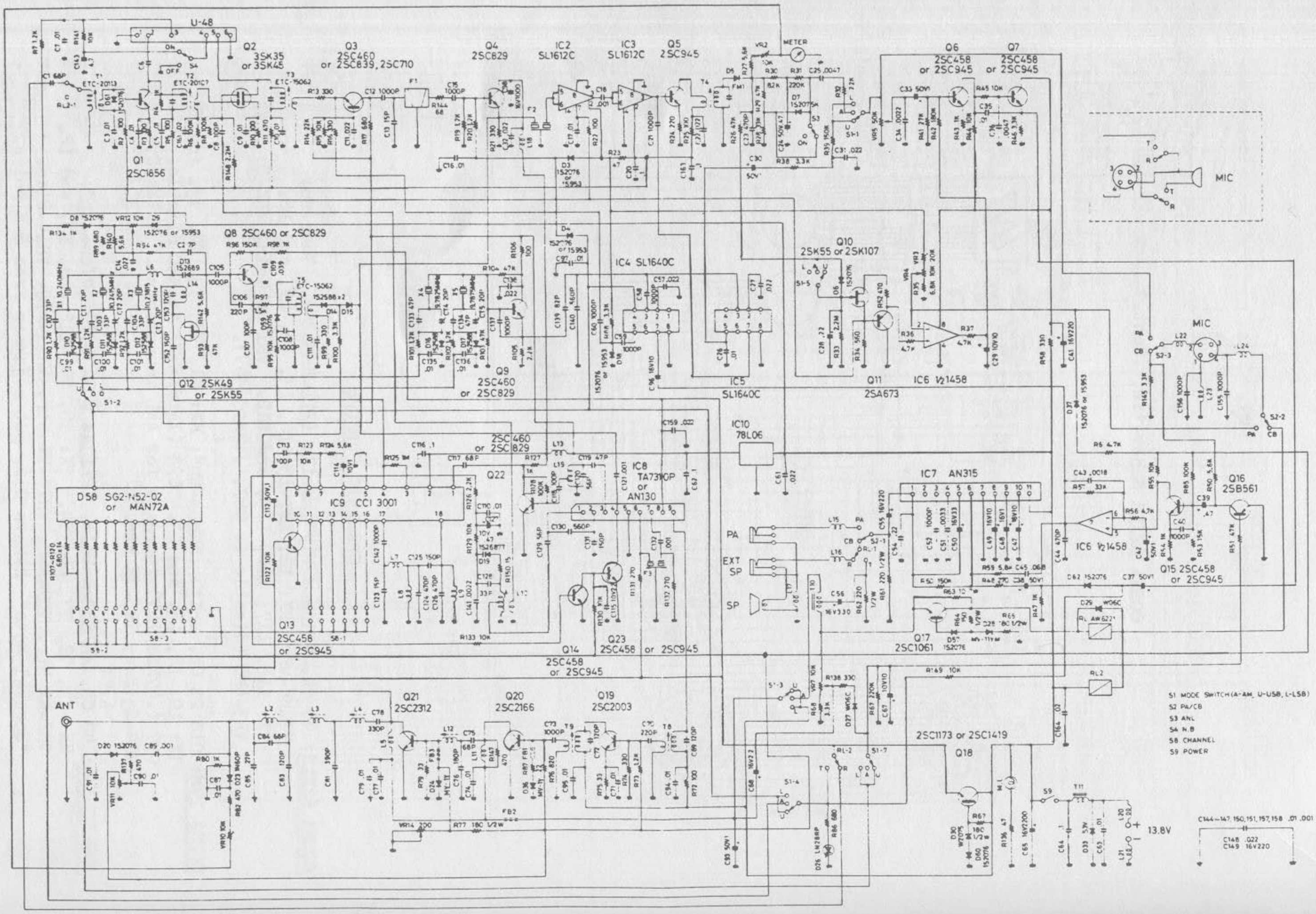
SBE LCMS-4 Schematic



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REALISTIC PRO-2003 PROGRAMMABLE SCANNER - SCAN SPEED CHANGE

by LESCOM

If you own a PRO-2003, you are aware of it's snail paced scan speed.

This modification will increase rate at a factor determined by you.

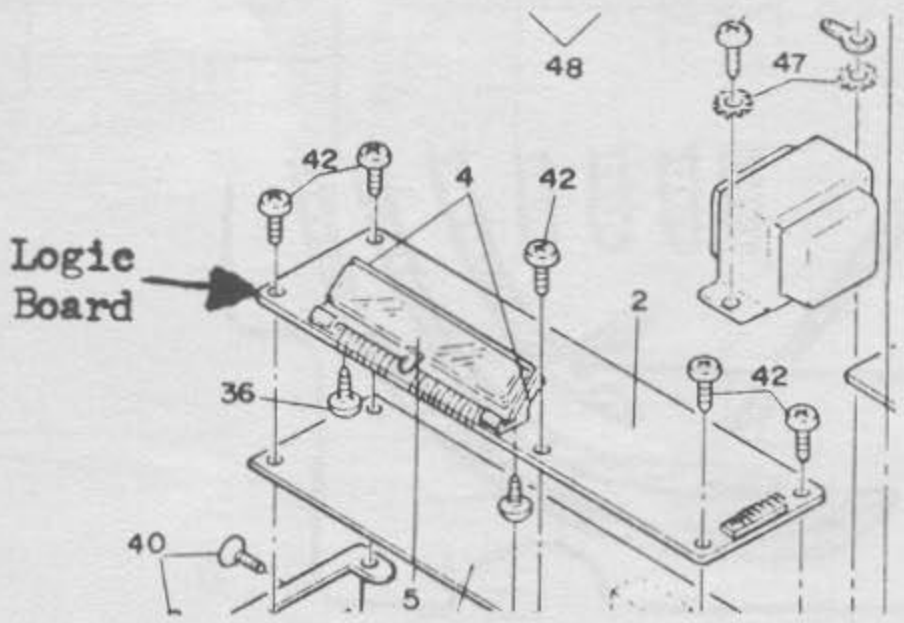
The only drawback of this is that the scan speed change is directly proportional to the delay period. The faster the scan, shorter the delay time.

In the modification the microprocessor clock speed is increased. By this increase everything take a shorter time.

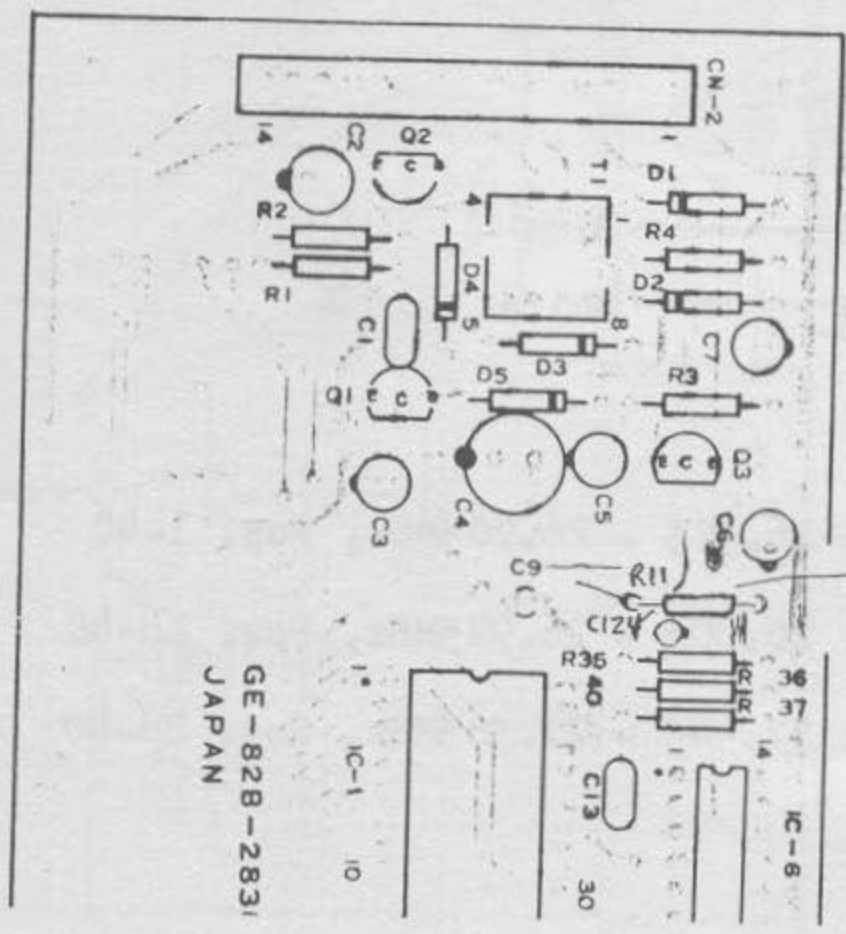
R11 (47K ohms) is the part that must be changed, suggest a nominal value of 27K ¼W.

See illustrations below for location of part that must be changed; be very careful when doing modification; as a screw-up is going to cost$$$$

EXPLODED VIEW



LOGIC P.C.BOARD (TOP VIEW)



R11 on Logic Board

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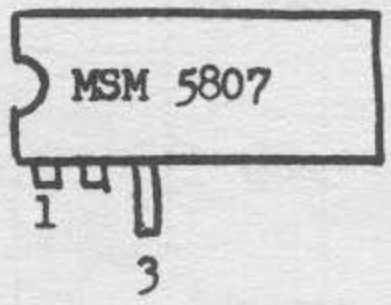
AUDIOVOX, Mdl. MCB-750: Fo Mod.

by M.M.

1. Remove covers from PLL unit.

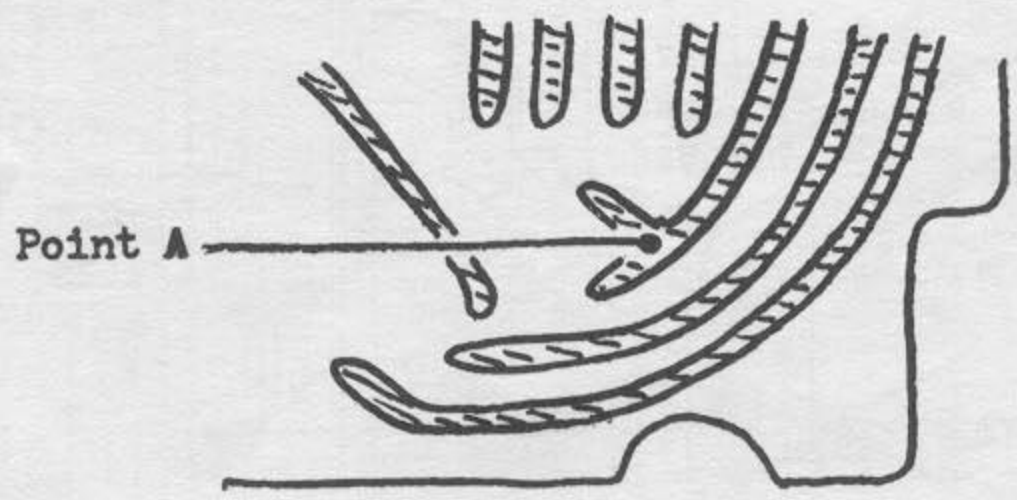
2. Locate pins 1 and 3 of PLL chip (MSM5807).



3. Clip pin 3 close to PCB and bend leg upward, CAREFULLY.

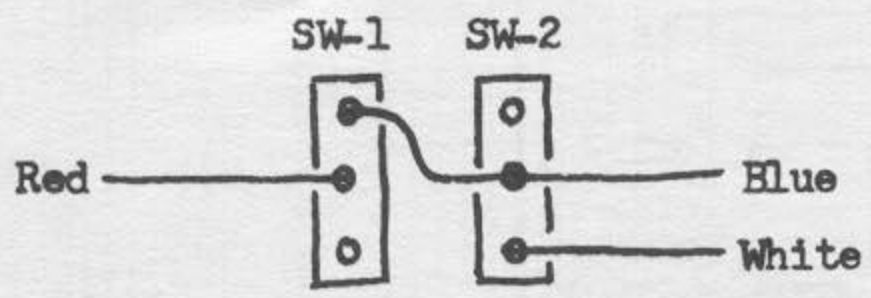
4. Solder 8" piece of wire to each, follow color code!
   Pin 1 - White, Pin 3 - Red.

5. Turn unit over and find indicated trace (A) on PCB under channel selector.



6. Solder 8" piece of Blue wire to Point 'A'.

7. Wire up two switches as below:



Switch 1 up . . . . . 26.325 - 26.765MHz, Pos. 1-40

Switch 1 and 2 up . . . . . 26.805 - 26.925MHz, Pos. 28-40

Switch 2 up . . . . . 27.445 - 27.565MHz, Pos. 28-40

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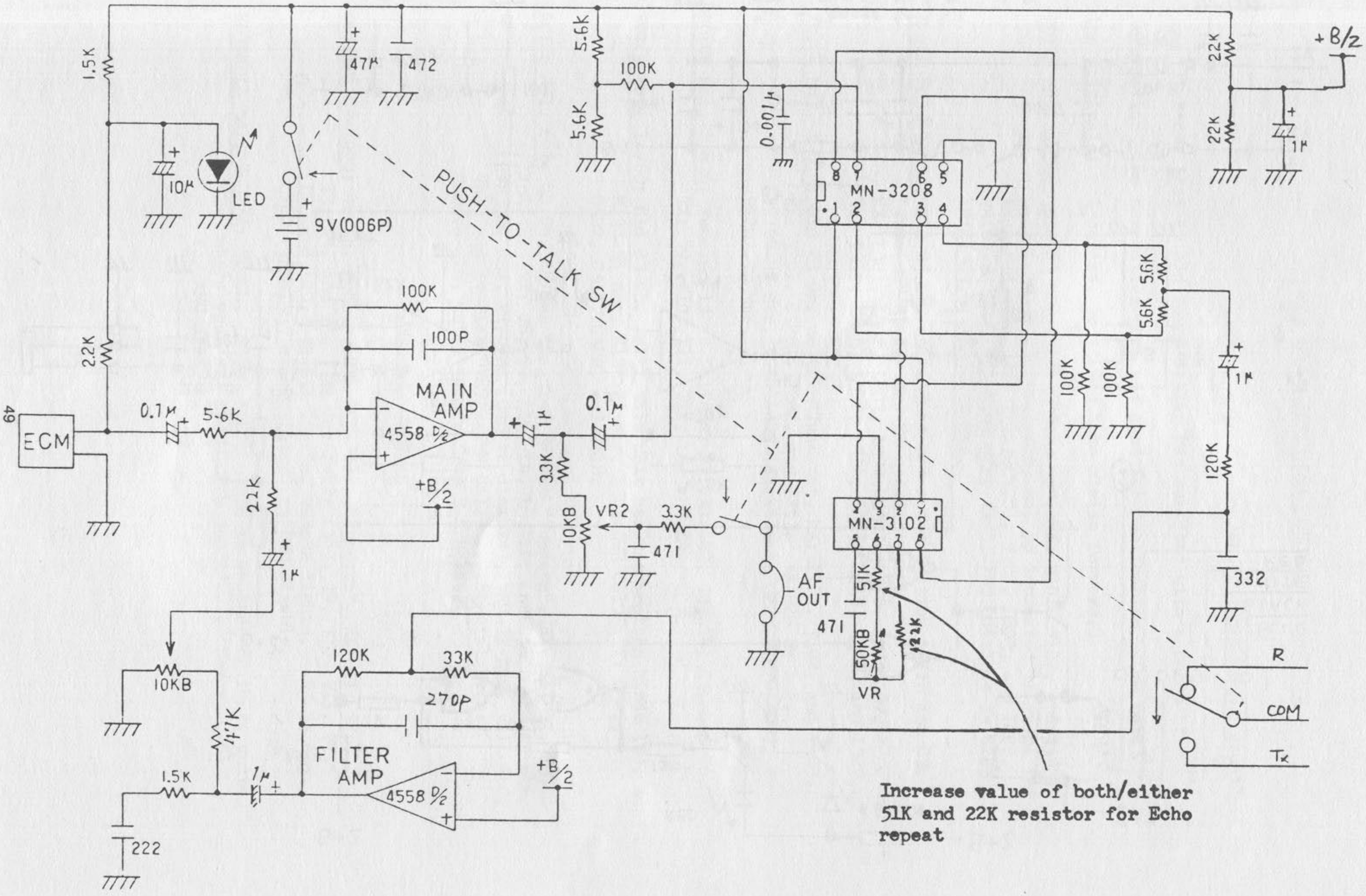
PALOMAR MDL. EC-2018 'ECHO POWER MIKE' SCHEMATIC



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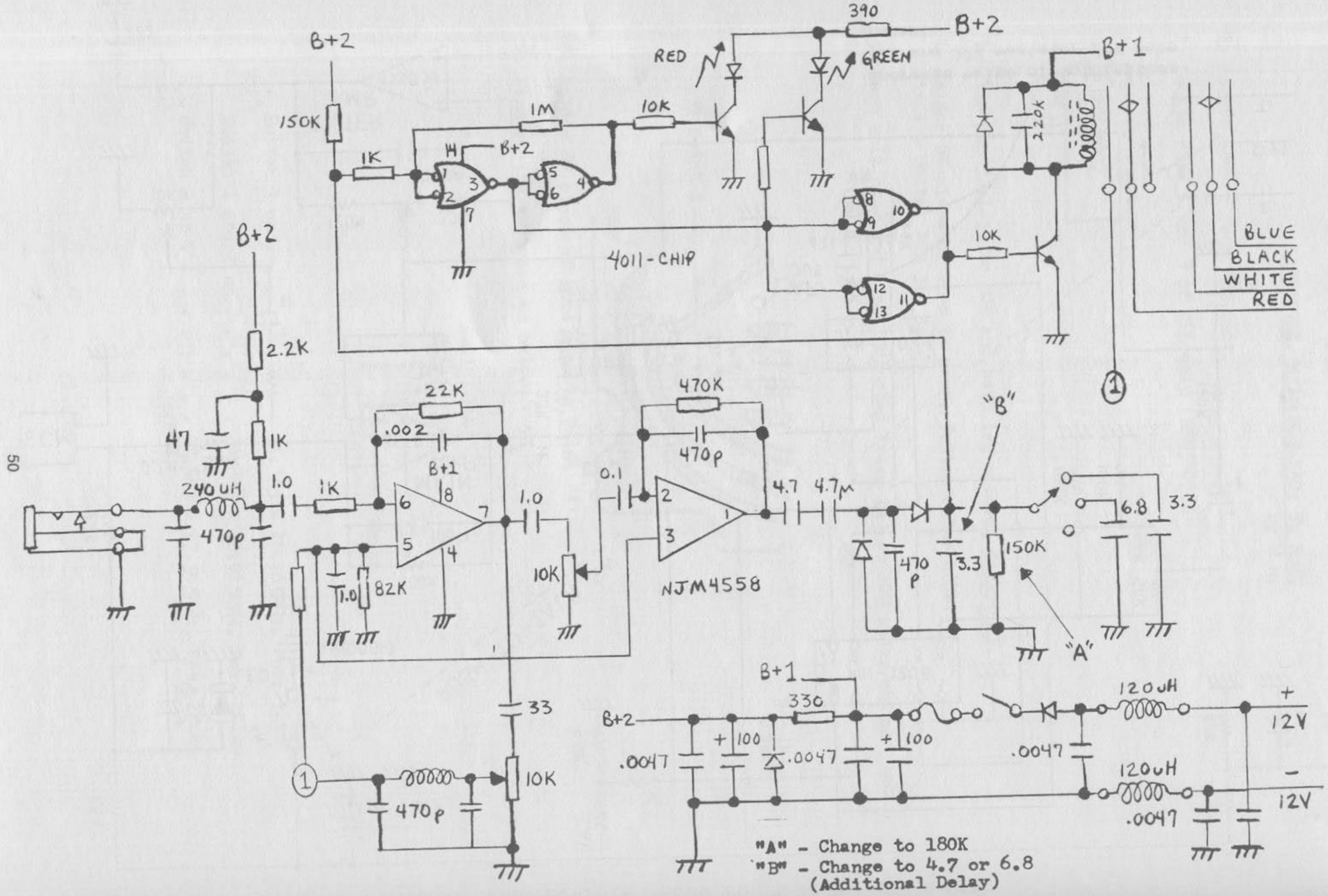
PALOMAR Mdl. CBE-2003 & 2007 "Voice-Activated" Microphones, Schematic



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ROYCE

It seems that an old Royce dealer has surfaced with a bunch of information; the schematics were not good for publication. (We need the originals; not copies; so if you have please forward.)

ROYCE Mdl. 1-580; Old 23 Ch. unit. "Tune-up", RX: T101, T102, and T103. C115 (.33Mfd/electrolytic) may be increased in value for improved ANL. TX: T201, CT201, T202, L203, and L204. VR103-Sq Rng, VR104-RX Mtr, VR201-AMC (disable is C225 1Mfd/50V.), VR202-TX Mtr.

ROYCE Mdl. 1-614; Old 23 Ch. unit. This was a combination AM/FM and CB. "Tune-up" is for the CB section only!
RX: L301, L302, L303, L304, L305, L306, and L307.
TX: L319, L318, L317, L316, L315, L314, L309, and L320.

ROYCE Mdl. 1-610; Old 23 Ch. unit. "Tune-up", RX: T101, T102, and T103. TX: T201, CT201, T202, and L203. VR102- Sq Rng, VR104-RX Mtr, VR201-AMC (disable is C225, 1MFD/50V), VR202-TX Mtr.

ROYCE Mdl. 1-636; Tune-up is as follows; RX: T1, T2, T3, T4, T5, and T6. TX: T9, T10, T11, T12, L6, and L4.

ROYCE Mdl. 1-700; Old 23 Ch. unit. This unit has the weather bands (2). R135-Sq Rng, R138-RX Mtr, R505-SWR Cal. TX: C502, C507, C511, C520, and C518.

ROYCE Mdl. 642; 40 Ch. AM/SSB "Deluxe" Base. "Tune-up", RX: T1, T2, T3, and T4. TX: T8, T9, L12, L4, L3, L2, and CT6. VR2-RX Mtr, VR3-Sq Rng, VR7-AMC (C68 is disable), VR9-TX Mtr, VR11-ALC, VR13 and 14-Bias, VR9/2-SWR Cal. ....Special Note: Remove Q16, put a jumper from B-E holes.

SPECIFIC TUNEUPS

OMNIVOX CB-1000; 40 Ch. Mobile (PLL-LC7131). "Tune-up", RX: T1, T2, T3, T4, and T5. TX: Carefully (T6), T9, T10, T11, T7, L7, and L10. VR3-TX lights, VR4-RX lights, VR5-Sq Rng. C207 (1Mfd/50V electrolytic) is AMC disable.

MOTOROLA Mdl. T4025A; 40 Ch. (00S09-PLL). This is another of those units where you 'got it or, you don't'.... Remove Q201 for AMC disable.

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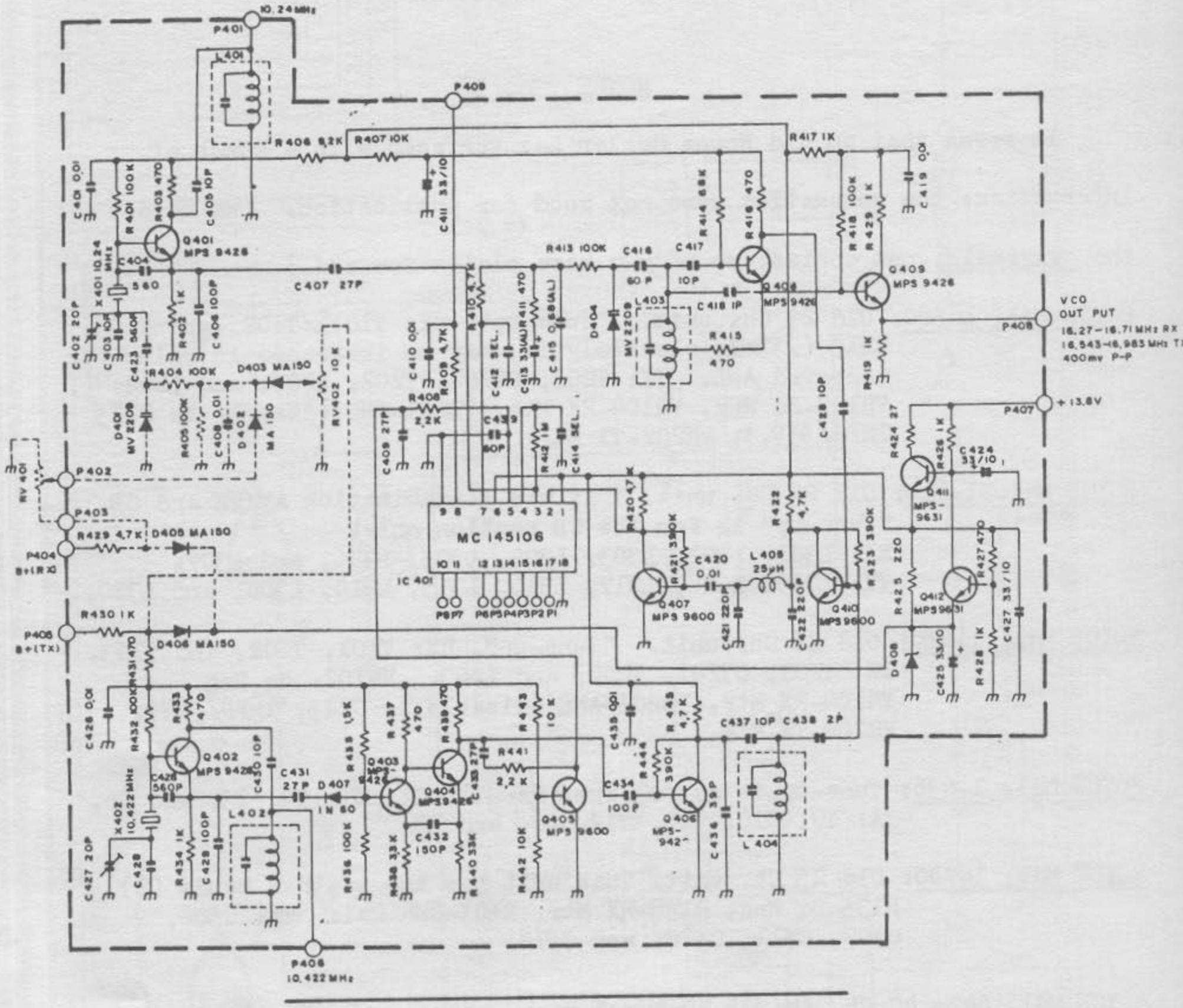
ALARON B-4085 PLL Schematic



ALARON Mdl. B-4085: 40 Ch. Mobile (MC145106-PLL) ..... B I N G O .....!

Finally, an AM unit with "highly modifiable" PLL chip. BUT, just try and find one! Some screwdriver jockey might have one laying around worth salvaging, if you're lucky.

"Tune-up", RX: L101, L102, L103, L104, L105, L106, and L108. "See dotted line upper right side of schematic for optional RF Gain circuitry. All such lines are for this." C127 may be increased in value for ANL improvement.
RV101-Sq Rng, RV102-RX Mtr, RV202-AMC (Disable is C210), RV310- TX Mtr.
TX: L301 (Carefully), L302, L303, L303, L304, L305, L306, L307, and L308. NOTE: Some units had 12W finals and could be pushed!

"Modification", Check out the program chart on schematic page - unit only plays with Pins 10-17. But Pin 9 is held at logic 0; take to a logic 1; and see what happens. D404, varactor in VCO will probably have to be changed to "Super Diode" for wide Fo coverage. X402 can also be changed.

I don't have access to a unit, so no telling what unit can really do.....

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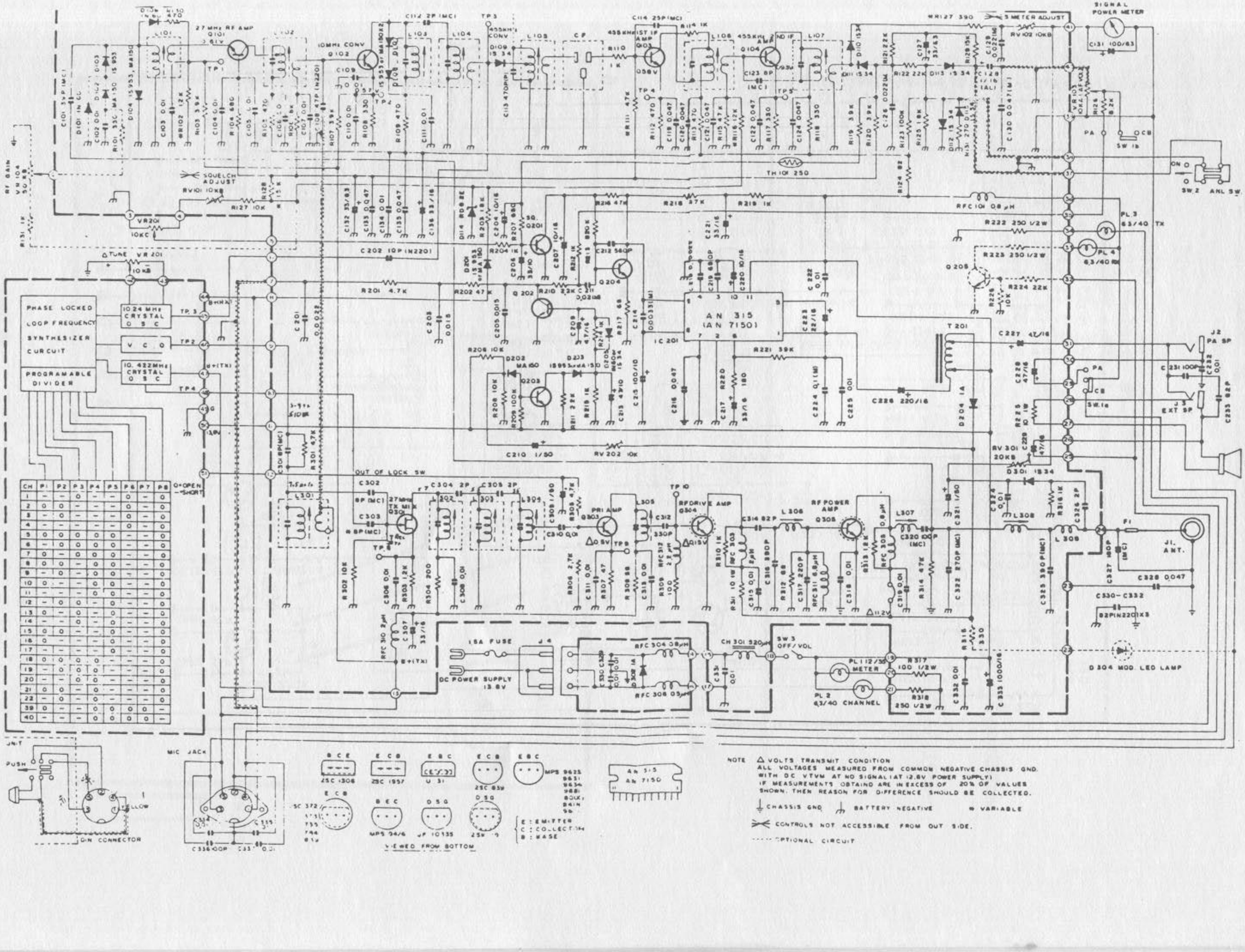
ALARON B-4085 Schematic



CH	P1	P2	P3	P4	P5	P6	P7	P8
1	-	-	-	0	-	-	0	-	0
2	0	0	-	-	-	-	0	-	0
3	-	0	-	-	-	-	0	-	0
4	-	-	-	-	-	-	0	-	0
5	0	0	0	0	-	-	-	-	0
6	-	0	0	0	0	0	-	-	0
7	0	-	0	0	0	0	-	-	0
8	0	0	-	0	0	0	-	-	0
9	-	0	-	0	0	0	-	-	0
10	0	-	-	-	0	0	-	-	0
11	-	-	-	-	0	0	-	-	0
12	-	0	0	-	0	0	-	-	0
13	0	-	0	-	0	0	-	-	0
14	-	-	0	-	0	0	-	-	0
15	0	0	-	-	0	0	-	-	0
16	0	-	-	-	0	0	-	-	0
17	-	-	-	-	0	-	-	-	0
18	0	0	0	0	-	-	-	-	0
19	-	0	0	0	-	-	-	-	0
20	-	-	0	0	-	-	-	-	0
21	0	0	-	0	-	-	-	-	0
22	-	0	-	0	-	-	-	-	0
39	0	-	-	0	0	0	0	-	1
40	-	-	-	0	0	0	0	1	-

0=OPEN -=SHORT

NOTE △ VOLTS TRANSMIT CONDITION
ALL VOLTAGES MEASURED FROM COMMON NEGATIVE CHASSIS GND.
WITH DC VTVM AT NO SIGNAL (AT 12.8V POWER SUPPLY)
IF MEASUREMENTS OBTAIND ARE IN EXCESS OF 20% OF VALUES SHOWN, THEN REASON FOR DIFFERENCE SHOULD BE COLLECTED.

⏚ CHASSIS GND ⏚ BATTERY NEGATIVE ⇕ VARIABLE

CONTROLS NOT ACCESSIBLE FROM OUT SIDE.

----- OPTIONAL CIRCUIT

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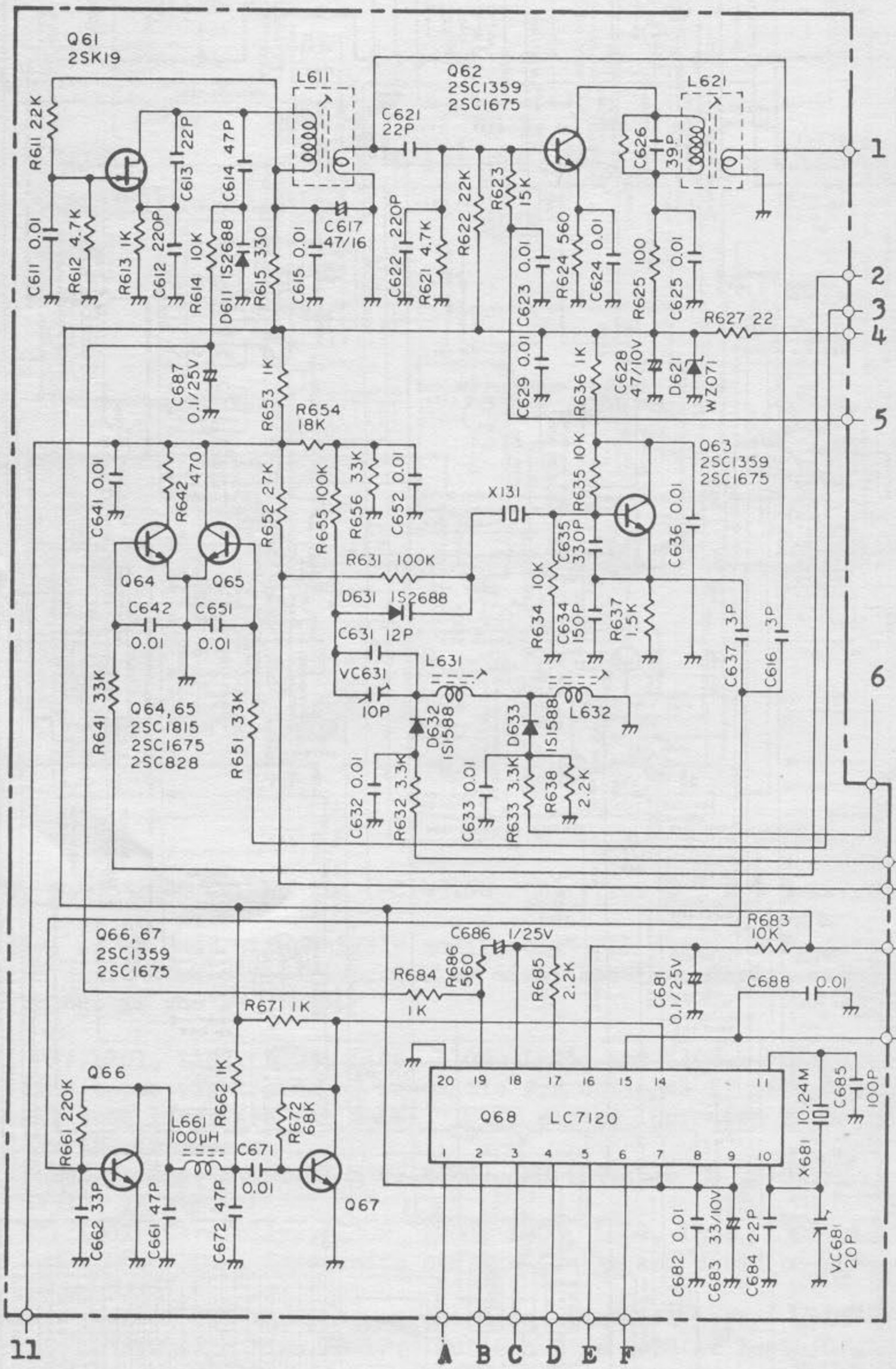
ROBYN SB-540D PLL Schematic



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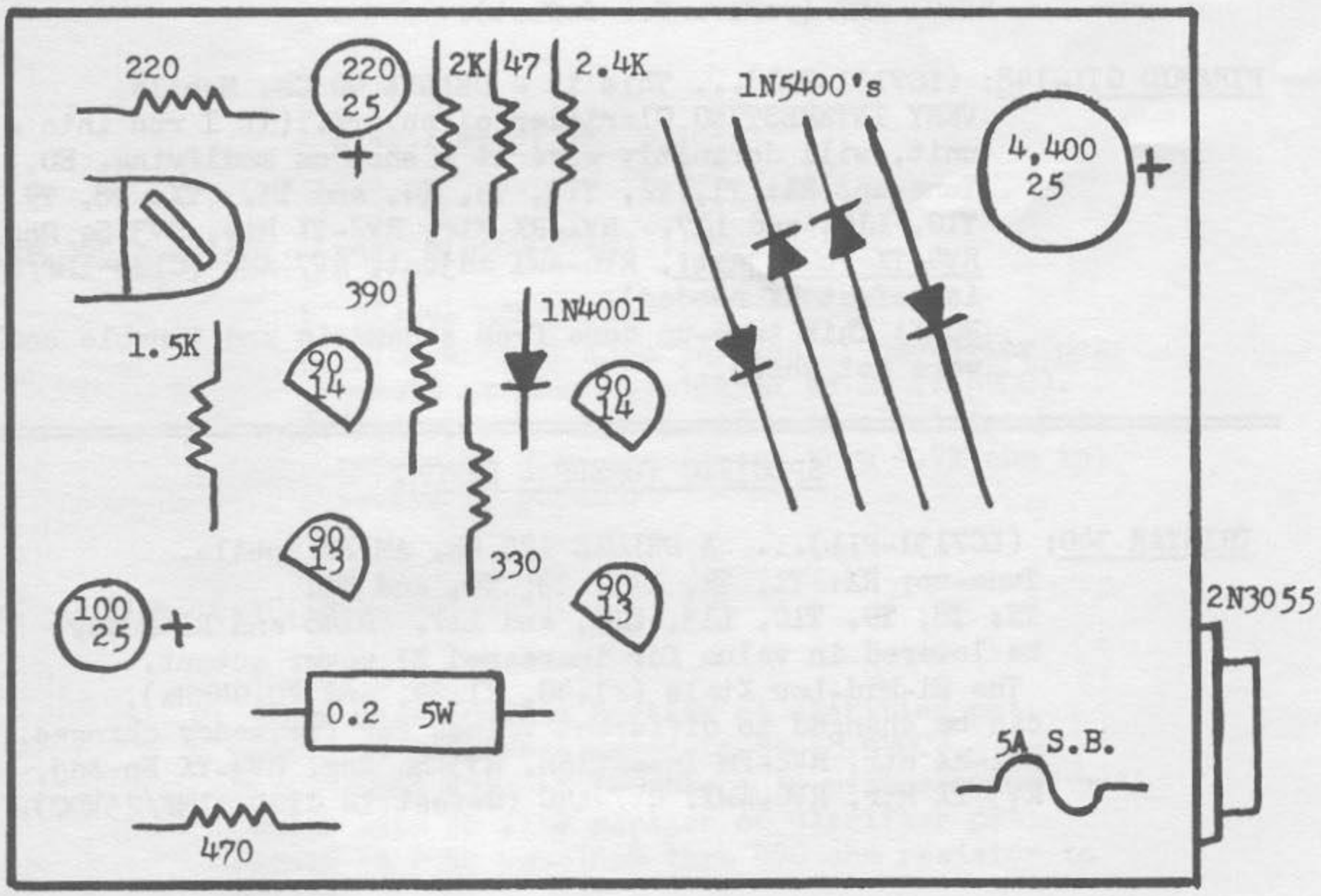
ROBYN SB-540D PLL PCB Wiring Diagram-Locator

Reference #	To...
1	C630
2.	LSB contact, S4-5
3	AM/USB contact, S4-5
4.	junction C963/R962
5	VR311, C315, S4-3 (AM contact, and R584
6.	R576, C181, R181, R150, S4-1 (AM contact)
7	S4-4 (USB contact), R591
8.	S5 (ClaroMic Switch) center contact external position
9	C997, L991, VR641, and R471
10.	R472
11	S5 (ClaroMic Switch) center contact internal position
A.	R709
B	R708
C.	R707
D	R706
E.	R705
F	R704

VANCO Mdl.-PS-12-5

Regulated Power Supply, PCB Parts/Layout Identification



9013 and 9014 transistors are a direct cross to ECG-123AP

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SPECIFIC TUNEUPS

KRACO KCB4007; "Latest offering from Kraco. Quality poor, unit should not have been marketed. Audio is especially of low performance even after tuneup!" (JV)
RV1-RX lights, RV2-TX lights, RV3-AMC, RV4-Sq Rng.
Will have to spread/compress L7, L6, L5, L4, and L3; for max forward. (LC7131-PLL)
(NOTE: Also see Vol. 25, page 20; for additional information.)

REALISTIC TRC474; (TC9106BP-PLL)....2SC2166 RF Final (12.5W/4A), but 7W is about nominal at 27MHz. VR1-S Mtr, VR2-Sq Rng, VR3-TX Mtr (VR3 is not labeled but in unit, look forward from antenna connector.), VR4-AMC. Tune L8, and L9 for max forward, L9 has no core in most units.

MIDLAND 77-104; (LC7132-PLL)...Tune-up; RX: L1, L2, L3, L4, and L5. TX: L8, L9, L11, and L12. C110 (1Mf/50VDC) may be increased in value for ANL improvement. RV1-RX lights, RV2-TX lights, RV3-Sq Rng, RV4-AMC (D9 is defeat if needed).

MIDLAND 77-145A (LC7132-PLL)...Tune-up; TX: L101, L102, L103, L104, and L105. C122 (1Mf/50VDC) may be increased in value for an improvement in ANL. TX: L202, L203, L204, L206, and L207. RV101-RX lights, RV102-TX lights, RV103-Sq Rng, RV104-AMC (defeat is C156, 1Mf/50VDC) if needed.

MIDLAND 76-300; (LC7131-PLL)..This is a 40 Ch. Base Station, stripped no-frills unit. Tune-up; RX: L101, L102, L108, L103, L104, L105, L106, and L107. TX: L301, L302, L303, L304, L305, and L306. RV101-Sq Rng, RV102-RX Mtr, RV202-TX Mtr, RV201-AMC (remove for defeat).

PYRAMID GTL-148; (LC7131-PLL)... This is a DELUXE 40 Ch. Mobile. VERY INTERESTING Clarifier circuitry..(If I run into a unit, will definitly give it a shot on modifying. ED.)
Tune-up; RX: T1, T2, T13, T3, T4, and T5. TX: T8, T9, T10, L16, and L17. RV1-RX Mtr, RV2-TX Mtr, RV3-Sq Rng, RV4-TX Fo Adjust!, RV6-AWI adjust, RV7-AMC (C120 1Mf/25VDC is defeat if needed).
NOTE: This tune-up done from schematic and tunable coils were not shown..

SPECIFIC TUNEUP - EXPORT

TRISTAR 340; (LC7131-PLL)... A DELUXE 120 Ch. AM/FM mobile.
Tune-up; RX: T1, T2, T13, T3, T4, and T5.
TX: T8, T9, T10, L15, L16, and L17. R146 and R148 may be lowered in value for increased RF power output.
The Hi-Mid-Low Xtals (21.48, 21.39, and 20.94MHz), can be changed to different values for frequency changes.
RV1-RX Mtr, RV2-FM Insertion, RV3-Sq Rng, RV4-TX Fo Adj, RV5-TX Mtr, RV6-AWI, RV7-AMC (defeat is C120, 1MF/25VDC).

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Tristar 120 (Export); AM Only 26.515-27.855 (LC7120-PLL)

by J.V.

This is a cheap; no-frills unit. Why, the PA switch was mounted on the side of radio is a mystery? Should have just left it off.

Tune-up: RV1-RX lights, RV2-Sq Rng, RV3-AMC, RV4-TX lights.

All RF power tuning coils are non-adjustable, spread/compress to tune.

"Haven't found any units out of box doing less than 4W, average 5W.

Good unit for the size and especially price."

UPDATES

Superstar 120FM: AMC disable is D-11.

Tristar 240: Re; Vol 25, page 19 - AMC adjust was omitted, RV7 (disable is R106). "Haven't had to disable, as 100% reached with control on all units checked." (JV)

Ham International UK 120FM: Be careful with L15. If out of alignment unit will not un-key! Will only have about 1W of carrier. (JV)

Clarifier 'FINE' Slides

by R.T.

Superstar 360FM, ±1KHz. (ref. S/N:63002491):

1. Remove D84.
2. Blue wire on fine portion of clarifier pot; remove at PCB; resoldered to B+ (8.4VDC).
3. Red wire on fine portion of clarifier pot; remove at PCB; resoldered thru 4.7K ohm in series to ground.

Jackson, ±2.2KHz. (ref. S/N:63005765):

1. Remove D58.
2. Brown wire on fine portion at clarifier pot; remove at PCB; resoldered to B+ (8.4VDC).
   NOTE: Front edge of PCB has a B+ path-check it out!
3. White wire on fine portion of clarifier pot; remove at PCB; resolder thru 470 ohm resistor to ground.

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POCKET ROCKET MODULATOR

Another of those small R.F. amplifiers that are hitting the market. This one is advertised as for the 28-30MHz range of operation.

Other specs: 80W rating, a receive amp, and (7 year warranty, read the fine print here... must be returned to dealer/distributor for this?). FINALLY, a company that knows how to print an Owner's Manual.....ALL; information needed is contained within: Operation, Schematic, Parts List, and Trouble-Shooting charts. NOTE the specifications as to RF input to prevent any problems, as this unit is in the $125+ range from what I understand. (Specs, illustrations, are below - skem. next page.)

Specs: RF Output 40-80W/40-50W Optimum for best AM modulation
40W PEP SSB
60-80W FM

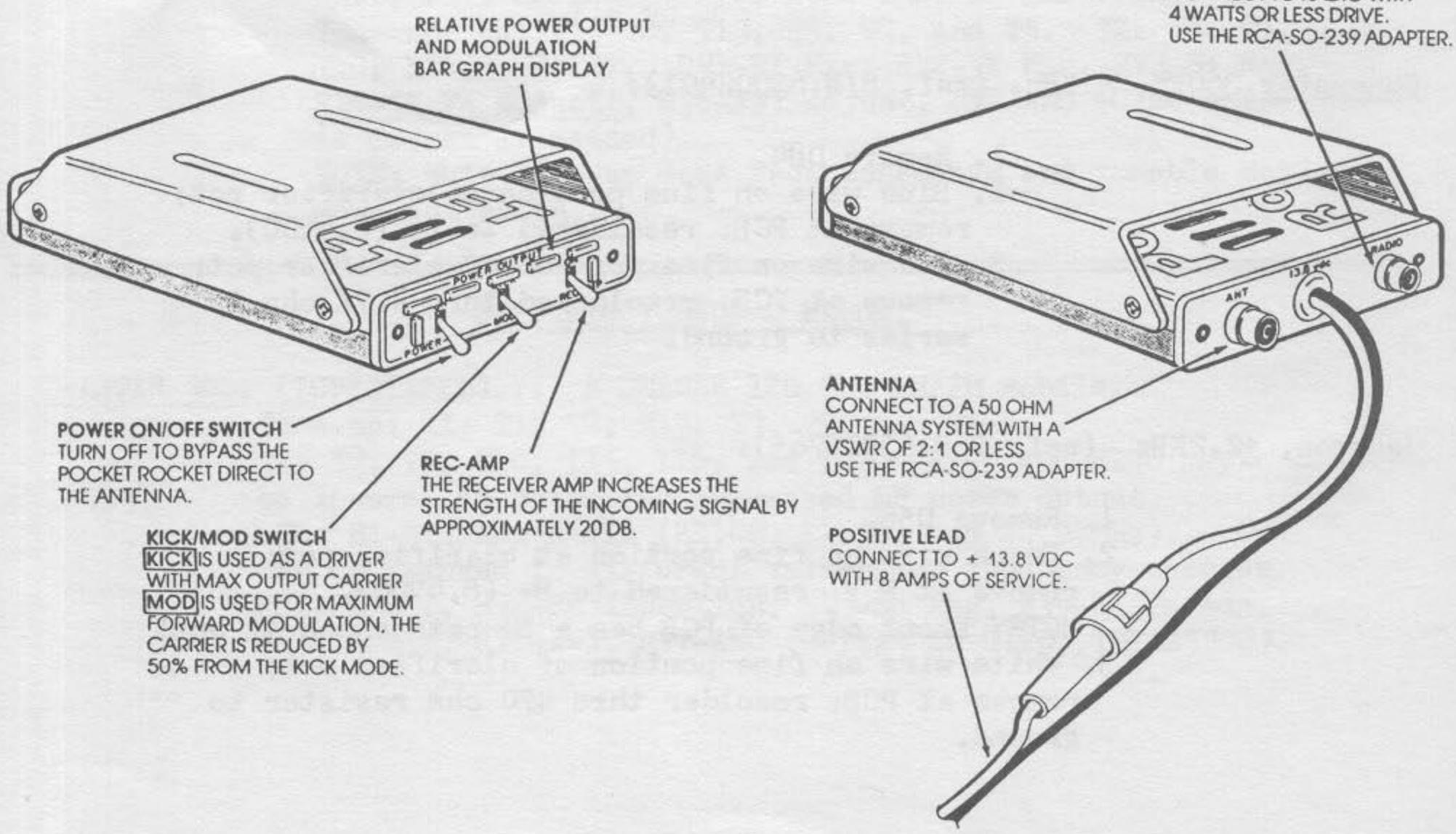
Drive ..... 4W Max/2W AM Optimum
6W PEP SSB Optimum

Modes ..... AM/FM/SSB, automatic delay for SSB

RF Gain ... 13DB Min

Power Requirement 13.8VDC at 7 Amps. (18VDC Max).

MAXIMUM SWR ALLOWED: 3:1



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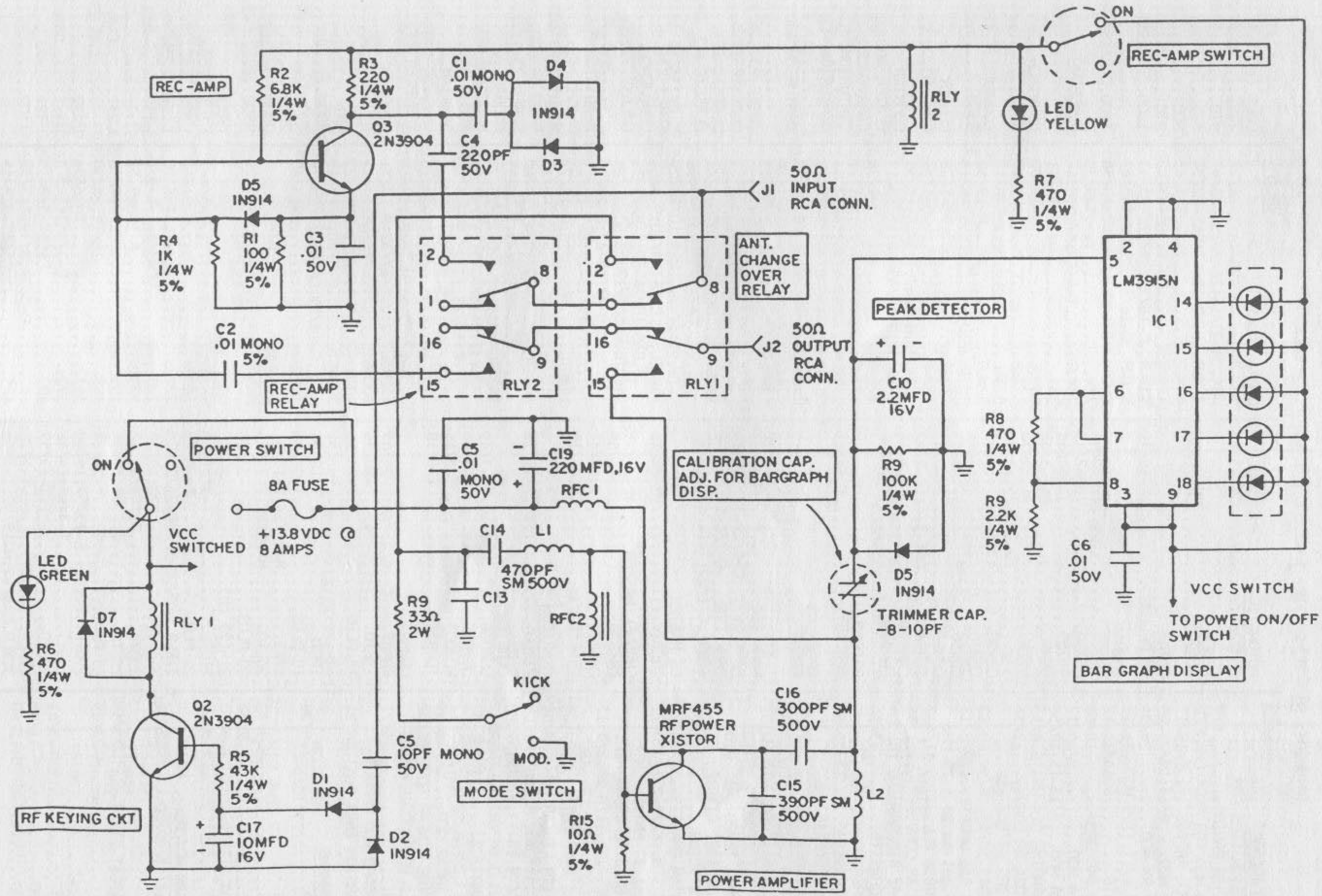
POCKET ROCKET SCHEMATIC



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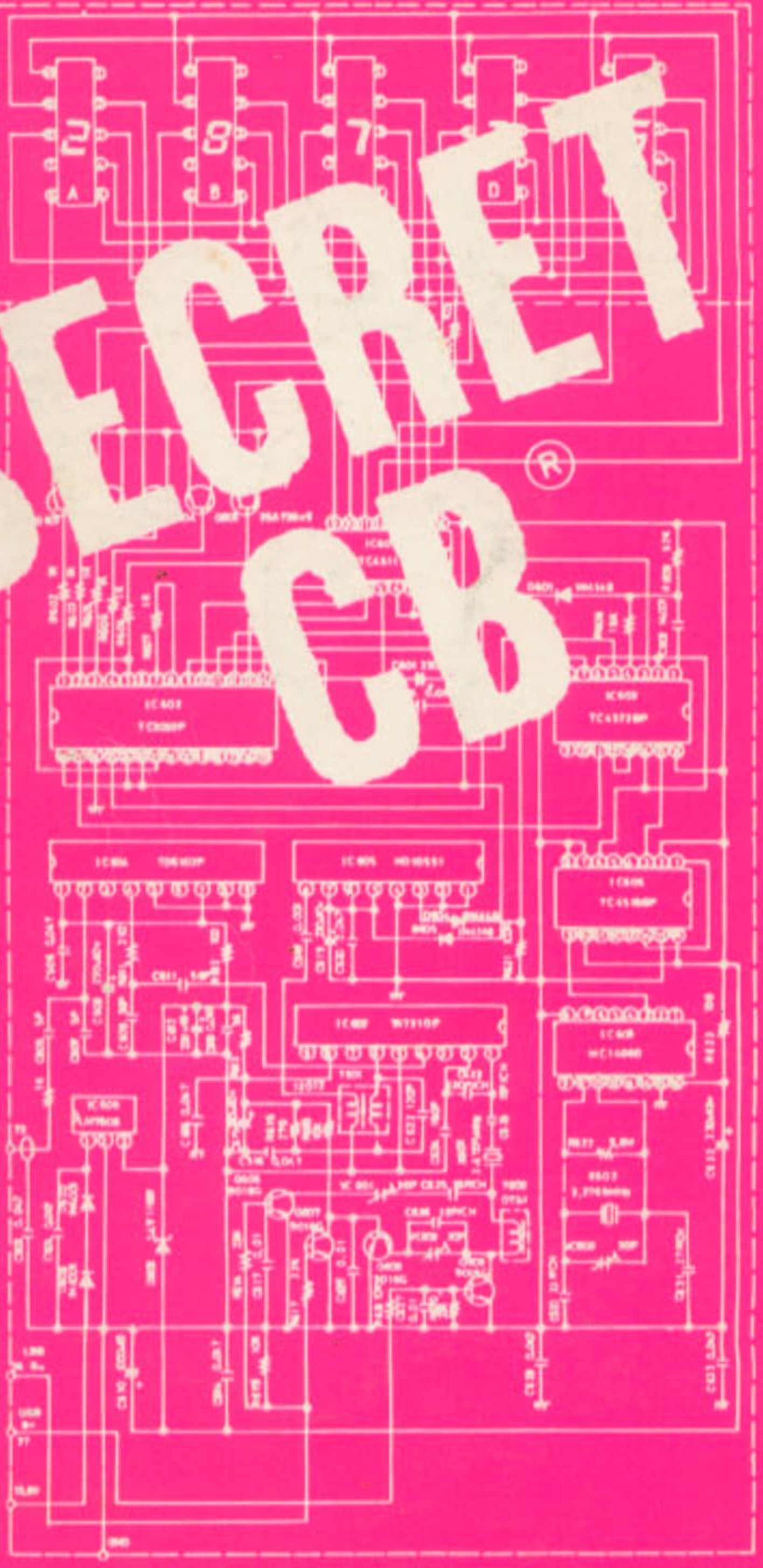

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